UNIVERSITY OF GONDAR

COLLEGE OF MEDICINE AND HEALTH SCIENCES

INSTITUTE OF PUBLIC HEALTH

COMPARATIVE ASSESSMENT OF SATISFACTORY LATRINE UTILIZATION AND ASSOCIATED FACTORS AMONG URBAN AND RURAL HOUSEHOLDS OF DESSIE TOWN DISTRICT, SOUTH WOLLO ZONE, ETHIOPIA

By: Tegegne Shiferaw

Advisors: - Mr. Walelegn Worku (B.Sc., MPH)

Mr. Daniel Haile (B.Sc., M.Sc.)

A THESIS SUBMITTED TO INSTITUTE OF PUBLIC HEALTH, COLLEGE OF MEDICINE AND HEALTH SCIENCES, UNIVERSITY OF GONDAR IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH.

May 2012

Gondar, Ethiopia

University of Gondar

College of Medicine and Health Sciences

Institute of Public Health

TITLE: COMPARATIVE ASSESSMENT OF SATISFACTORY LATRINE UTILIZATION AND ASSOCIATED FACTORS AMONG URBAN AND RURAL HOSEHOLDS OF DESSIE TOWN DISTRICT, SOUTH WOLLO ZONE, ETHIOPIA

By: Tegegne Shiferaw

Approved by the Examining Board

_____ _____

Head, Institute of Public Health

Advisor(s)

_____ _____

_____ _____

Examiner

_____ _____

UNIVERSITY OF GONDAR

COLLEGE OF MEDICINE AND HEALTH SCIENCES

INSTITUTE OF PUBLIC HEALTH

COMPARATIVE ASSESSMENT OF SATISFACTORY LATRINE UTILIZATION AND ASSOCIATED FACTORS AMONG URBAN AND RURAL HOUSEHOLDS OF DESSIE TOWN DISTRICT, SOUTH WOLLO ZONE, ETHIOPIA

By: Tegegne Shiferaw (B.Sc.)

Address: Cell phone 0913858845

E-mail- ancheneshe@gmail.com

Approved by the examining board

_____ _____

Head, Institute of Public Health Signature

Advisor(s)

1. _____ _____
2. _____ _____

Examiner

Acknowledgement

I would like to express my heartfelt gratitude to my advisors **Mr. Walelegn Worku** and **Mr. Daniel Haile** who have been a great help to the completion of this thesis starting from commenting the draft of my proposal, and final paper to giving me important and constructive suggestions.

I would like to extend my in-depth thanks to University of Gondar, College of Medicine and Health Sciences, Institute of Public Health for giving me such a chance to conduct this work.

I would also like to express my great thanks to Health Informatics department for the internet access without which the completion of this thesis would have been difficult.

Furthermore I am very grateful to forward my appreciation to Dessie Town District Health Office for their collaboration during data collection period.

Finally I would like thank all household respondents, data collectors and supervisors for their active participation during the data collection process.

Table of Contents

Contents **Pages**

List of Tables

List of Figures

List of Annexes

List of Acronyms

CHPs	-	Community Health Promoters
EB	-	Ethiopian Birr
HEP	-	Health Extension Program
HEWs	-	Health Extension Workers
KAP	-	Knowledge, Attitude, and Practice
MDGs	-	Millennium Development Goals
MOH	-	Ministry Of Health
NGOs	-	Nongovernmental Organizations
S and H	-	Sanitation and Hygiene
UNs	-	United Nations
UNICEF	-	United Nations Children's Fund
UOG	-	University Of Gondar
WHO	-	World Health Organization

Abstract

Background: Although one of the most essential services that are needed for living is sanitation, 40% of the world's population lack improved sanitation and 80% of these people live in rural areas. Construction of latrines in the absence of its satisfactory utilization will not allow wider benefits to be obtained, making behavioral change a critical component required to improve sanitation.

Objective: To compare the extent of latrine utilization and identify factors affecting latrine utilization among urban and rural households of Dessie Town district.

Methods: A comparative cross sectional study was conducted between urban and rural households of Dessie Town district from March1 - 30, 2012. Participants were selected using multi stage sampling. Data were entered and analyzed using SPSS version 16. Odds ratio with 95% CI and P-value were calculated to ascertain the association between dependent and independent variables.

Result: Latrine utilization was found to be satisfactory for 187 (47.3%) of the urban and 198 (49.3%) of the rural study groups. Education of respondent was statistically associated with extent of latrine utilization among the urban, but not among the rural study groups. Satisfactory latrine utilization increases for maintained latrines [(AOR (95%CI) = 3.56(2.47, 5.13)]. Respondents who constructed latrine inside premises are more likely to have satisfactory latrine utilization than those constructed outside premises [OR (95%CI) = 2.55(1.80, 3.60)]. Reasons for using latrine always were associated with extent of latrine utilization only among urban study groups [OR (95%CI) = 3.82(2.07, 7.02)].

Conclusion and Recommendation: There is no statistically significant difference in latrine utilization between urban and rural households in the district. Slab sealed latrine increases the likely hood of satisfactory latrine utilization. Imposition of households to construct latrines need not be encouraged. Programs better focus latrine construction not to be far apart from the house, and also to be located inside premises. In addition to construction of latrine, maintenance of existing latrines needs to be focused and slabs of latrines need to be plastered with mud or cement.

1. Introduction

1.1 Statement of the problem

Worldwide, 2.6 billion people do not use improved sanitation. 1.1 billion people defecate in the open field. This 1.1 billion people live in ten countries, including Ethiopia (1, 2). At current rates of progress to improve sanitation the world will miss the Millennium Development Goal (MDG) sanitation target by almost 1 billion people; however the MDG target does not measure proper utilization of these sanitation facilities (2, 3). MDG's target is to halve the proportion of people without access to improved sanitation and the indicator used to measure the progress is the proportion of population having access to improved sanitation facilities (4, 5). Four point three percent of the global disease burden is attributed to diarrheal diseases, and 88% of this burden is due to unsafe drinking water supply, inadequate sanitation, and poor hygiene (5-9). Improved hygiene mainly hand washing and satisfactory utilization of latrines have more impact than drinking water quality for reducing morbidity and mortality from excreta borne diseases (10, 11). Water and sanitation interventions are cost effective. Cost-effectiveness analysis on some water supply and sanitation interventions showed that they are highly cost-effective for the control of diarrhea among under-5-year-olds (12, 13). Improved sanitation reduces diarrhea morbidity by 37.5%; the simple act of washing hands at critical times can reduce the number of diarrhea cases by as much as 35% (14).

The progress that has been made towards the Ethiopian national sanitation goal besides the development of policies and strategies include increased sanitation coverage. Community Led Total Sanitation is also one of the recent phenomenon gaining acceptances amongst many actors including government. It emphasizes to create open defecation free villages through individual household latrine construction (15, 16). HEWs (Health Extension Workers) supported by CHPs (Community Health Promoters) are the 'frontline' implementers of the H&S (Hygiene and Sanitation) strategy. For HEWs, S&H is one major component of their work in the HEP (Health Extension Program). HEWs network with local actors, NGOs and Kebeles to give incentives to households or sanction of non-complying ones so as to improve access

and proper utilization of latrine (17). Diarrheal disease reduction can be achieved by 36% through safe disposal of excreta alone, and over 50% of infections can be transmitted from patients to healthy individuals through direct or indirect means of transmission (10, 18). Thus the role of HEWs in bringing such reduction can be there when real factors of latrine utilization are identified and appropriate interventions are targeted towards.

Access to latrine in Ethiopia and Amhara region of Ethiopia is 37% and 29% respectively; less than 4% of households in rural Amhara; and the country were estimated to have access to any form of sanitation facilities in 2004 which is only the hard ware component (15, 18). However; One of the three key water related behaviors for H&S promotion, which is the soft ware component identified by WHO (World Health Organization) is sanitary disposal of human excreta, but little is known about disposal practices whether it is satisfactory or not, and their determinants as well indicating the need for further investigation (19-21).

1.2 Literature review

Proper use of sanitation facilities, particularly latrine use, can decrease the risk of diarrhea in almost the same degree as improved water supply, but greater benefits can be achieved when these are combined together and education on hygienic practices are strengthened as human behavior is affected by a variety of factors like skill development, accessibility of services, policy, cultural factors and internal factors like perceived social norms, perceived consequences related to their knowledge and attitude (10, 21, 22).

MDGs identify improved sanitation as "connection to a public sewer, connection to a public system, pour flush latrine, simple pit latrine or ventilated improved pit latrine. The excreta disposal system is considered adequate if it is private or shared (but not public), and if it hygienically separates human ordure from human contact" so as to reduce the burden of excreta borne diseases (23). One sixth (1.1 billion) of the world population lacks access to improved water supply, two-fifth (2.4 billion) have no improved sanitation indicating the need of greater priority for sanitation facility and

most of these people live in Asia and Africa (24). Studies conducted in Sir Lanka and Philippines found that unhygienic disposal of excreta were related to increased incidence of diarrheal diseases especially among younger children (25, 26).

One of the most essential services that are needed for living is sanitation. The provision of this service is very poor particularly in developing countries like Ethiopia. Access to latrine for Ethiopia and Amhara region is 37% and 29% respectively (27); this figure only indicates the hard ware part without showing how satisfactory is utilization of latrines. But changing hygiene behavior is complex and it will be most successful when it targets a few behaviors with the most potential for impact. Based on extensive research, WHO and UNICEF (United Nations International Children's Fund) have identified hand washing with soap during critical times like after visiting latrines and before preparing food (4, 28, 30); hence besides increasing access, Ethiopia should make greater emphasis in accordance to WHO and UNICEF direction to achieve more impact of satisfactory latrine utilization.

Determinants of latrine utilization

Socioeconomic and demographic determinants

1. Socioeconomic and cultural factors: Some cultures may forbid men and women from sharing latrines indicating that women may not use latrine sufficiently (29-31). Female headed households, elderly and ethnic minorities are disproportionately poor thus tend to be more affected by sanitation related problems. A study in Burkina Faso indicated that the reason for low-paying jobs by householders is their low educational level indicating inadequate financial resources for daily subsistence and hence investment into good excreta disposal facilities (32). 75% of income is spent on food while 25% was used for clothing, house rent, and other socio economic issues. Inadequate money is available for sanitation. People do not give priority for latrine construction and maintenance when there is competition for resources, this is the reason why a number of latrines observed are half constructed and do not have permanent roofs and doors in some cases (32, 33). A focus group discussion in one study indicated that the decision to invest in and to construct a latrine falls within the male and if a woman wanted a latrine, she would

be dependent on her husband as he takes the decision to locate, dig the pit and pay for materials needed. The problem is men do not see latrines as a priority (33).

2. Demographic factors: A study on follow up of a low cost latrine indicated that larger households (>5 members) were 1.5 times more likely to be using a latrine than smaller households (<5 members) (18). Some studies showed that utilization of latrine is also affected by being elderly or young. Eighty seven (11.3%), of the children did not use latrines, because of fear of falling in through the squatting hole and darkness. The same study indicated that the main reasons for not having latrine are high cost and lack of space (34). In a study of sustainability and acceptability of latrine provision in Gambia most household heads reported that feaces of children was disposed of in the latrine, but the investigator explained that it was not possible to observe this without changing behavior(35).

Environmental Determinants

1. Presence or absence of Latrine: The construction of simple pit latrines is a relatively cheap technology that may be used to prevent and control the spread of fecal borne diseases. According to the study conducted on impact of latrines on childhood diarrhea in Hullet Eju Enessie District of Amhara Region, most respondents (74%) said they had not built a latrine because of lack of awareness. Of those without a latrine, 96% had been advised to build one, 81% by their local administrator (36). Another similar study on follow up of low cost latrines showed main reasons for not constructing latrines as lack of manpower (41%), being too busy (15%) and lack of awareness (11%) (18).

A focus group discussion regarding hygienic behavior and latrine adoption in the local government area of Bobo-Dioulasso, Burkina Faso indicated respondents lack understanding between hygienic practices and water related diseases (32).

2. Distance of latrine from household: While household access is important, community sanitation coverage is even more important to improve health around the world. Some studies indicated that latrines constructed for use in some households

of the rural communities are far from the recommended distance, which is only 6 meters from the household. They also indicated that these distant latrines were not usable or used rather served as sites for mosquito breeding sites (12).

3. Perceived advantage of latrines: A study on impact of latrines on diarrheal diseases indicated that respondents with or without a latrine (96%, 116/121) to have advantages and the only one disadvantage that was mentioned was increase in flies. In the same study Improved cleanliness (48%) and health benefits (42%) were the most frequently mentioned advantages and odds of stating convenience (5.1, 95% CI 1.4 17.8) or privacy (3.3, 95% CI 1.3–8.2) as advantages were higher among those using a latrine than those without or not using latrines (36).

4. Perceived reasons for constructing latrines: A KAP (Knowledge, Attitude, and Practice) study undertaken by MOH (Ministry Of Health) in Ethiopia in 1996/97 E.C. indicated that the major reasons for not using latrines were lack of superstructure, poor hygiene and poor maintenance of latrines (37). Some households reported that they lack construction materials like wood, flooding and caving in of latrines. Latrines constructed by rural households based on a fear of sanctions or some form of punishment rather than on adherence to good hygiene and sanitation practices led to low utilization of latrines, and low levels of behavioral change (17). It looked a likely instance where latrine construction was carried out without any technical support from the appropriate authorities. This was a case before 2003 and 2004 E.C, where orders were given to households by local officials to construct latrines. But, post 2004E.C., households citing 'fear of sanctions' as the reason decreased which explains improvement in awareness of households, with effective engagement of HEWs and CHPs (17).The extent of latrine utilization in the houses that constructed latrines by seeing others was about 5 times [OR: 4.57, 95%CI: (1.34-15.55)] more satisfactory than houses imposed by other bodies to construct latrines (36).

5. Latrine ownership: A study on status of water use sanitation and hygienic condition showed that out of the households using any type of hygienic latrine, 29% owned the latrines, they used either singly (6%) or jointly (23%). However, major

proportions (61%) of the latrines were owned by the landlords. The same study showed that average 37households used one latrine unit; however, majority (53%) of the households either used a latrine or shared with another household (38). One study on effect of community intervention with pit latrines in five districts of Amhara region showed that an increase in family size (OR per additional member = 1.2[95% CI: 1.1–1.3]), and higher socio-economic status (tin roof) (OR = 1.8 [95% CI: 1.2–2.9]) were independently associated with latrine ownership (39).

6. Duration of latrines owned by households: The higher the duration of the latrine, the more likely that it will be properly utilized. One study identified that extent of latrine utilization was significantly associated with duration of latrine owned by household. It was about 2 times [OR: 1.99, 95%CI: (1.49-2.66)] more satisfactory in households with owning latrines for > 2years than owning latrines for less than two years (36).

Finally construction of sanitation facilities only is not enough to improve health; sanitation and hygiene promotion must be together with the infrastructure investments to realize their full potential as a public health intervention (4).

1.3 Justification

The Ethiopian MOH started construction of sanitation facilities in a broader context with a particular emphasis on the rural community. This was in line with the start of the HEP in 2004 as improvement of sanitation facilities is one of the main components of the HEP. Seven of its sixteen extension packages were dedicated to environmental health issues (17, 36). Health sector involvement can contribute to the success of water and sanitation projects, but providing the hardware part (water pipes and latrines) only without the software component (hygiene promotion) and community training and organization will not maintain services satisfactory (24).

Currently all the rural households of Dessie ketema district have been graduated as implementing all of the sixteen packages of the HEP; but latrines constructed for use among the rural households are not being utilized; besides, satisfactory latrine utilization and associated factors in the rural households compared to the urban households were not assessed before. This study therefore tried to assess if there was a difference in extent of latrine utilization and identified the factors that affect latrine utilization among urban and rural households of Dessie Town district thus provided potential areas of intervention for concerned bodies and stakeholders.

2. Objectives of the study

2.1 General objective - To compare satisfactory latrine utilization and identify associated factors affecting latrine utilization among urban and rural households of Dessie Town district.

2.2 Specific Objectives

1. To compare satisfactory latrine utilization between urban and rural households in the district.
2. To identify factors affecting satisfactory latrine utilization among urban and rural households in the district.

3. Methods and subjects

3.1 Study Setting (Area)

The study area was Dessie Town District which is one of the districts in South Wollo Zone. Dessie town, the capital of the zone, is located 400Kms from Addis Ababa along the main way taking from Addis Ababa to Mekele. Dessie Town district is comprised of urban and rural kebles. In the district there is one health office, four health centers, four upgrading health centers and six health posts. The health posts are located in the rural kebeles of the district where two HEWs are staffed for each health post performing the 16 Health Extension packages.

3.2 Study Design

Comparative cross-sectional study design supplemented with observation was used to compare latrine utilization.

3.3 Source Population

All households having latrine in both urban and rural kebeles of Dessie Town District were the source population.

3.4 Study population

The study population included households with latrines in the urban and rural kebeles of the district which were selected for the study.

3.4.1 Inclusion criteria - Those households in the district having latrines.

3.4.2 Exclusion criteria - Those households which head of households were not present at the time data collection, and who were sick.

3.5 Sample size

The sample size calculation was done by Epi-Info version 3.5.1 statistical package using two population proportions assuming n1=n2, power=80%, β=0.2 level of significance (α) =0.05. Given prevalence of 45% satisfactory latrine utilization among urban households and 60% among rural households of the district from professional judgment. The sample size for each group was found to be 186households. Considering non response rate of 10% and design effect of 2, for each urban and rural; 410households with latrines, a total 820households were included in the final sample.

3.6 Sampling procedure

Dessie ketema district consists of 10 urban and 6 rural kebeles and multistage sampling was used to select the required sample size. First simple random sampling was used to select 50% of the kebeles i.e. five kebeles from the urban kebeles and three kebeles from the rural kebeles, and then systematic random sampling was used to proportionally select the study households from each of the selected kebele.

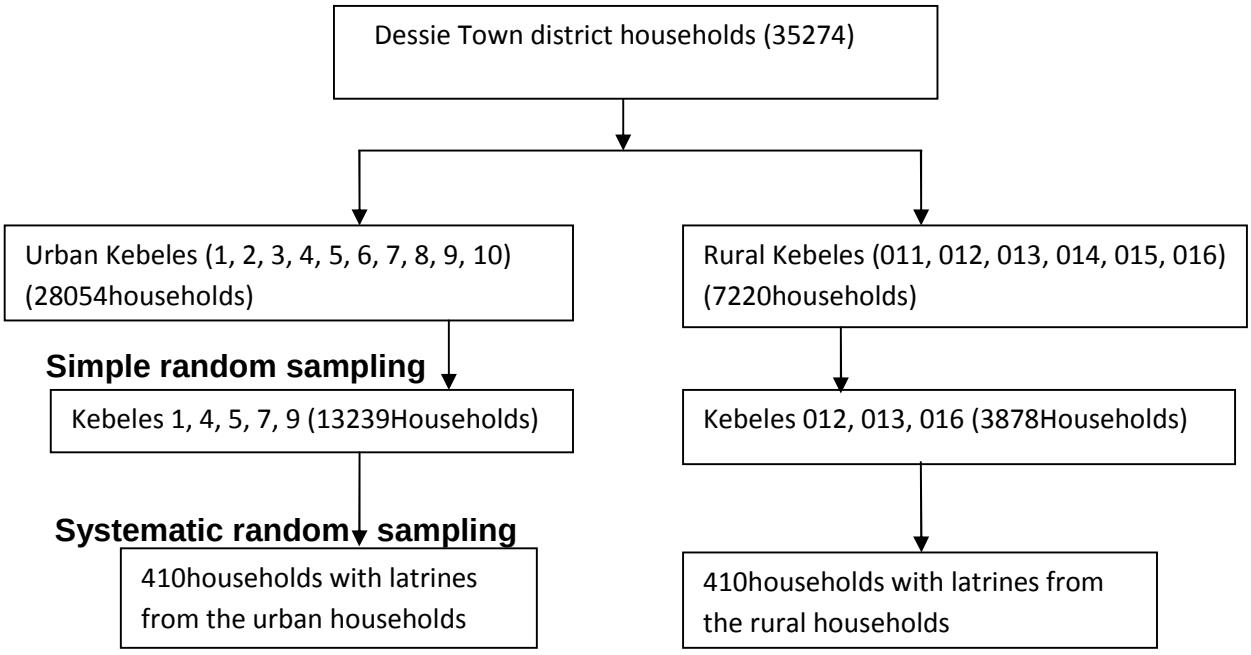

Figure 1: Schematic representation of sampling procedure for urban and rural households, Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

3.7 Data collection procedures

Development of Tools

Questionnaire: A structured questionnaire together with observation check list was used to collect the required data. The data collection tool was first prepared in English and then translated into Amharic and finally it was retranslated into English to check for consistencies.

Check list: For observations that were carried out together with the interview observation check list was prepared. This check list have questions to choose from the given choices and it was attached next to the questionnaire so that the field workers checked simultaneously with the interview.

Data collectors and supervisors' recruitment: Six Environmental Health Officers for data collection and two supervisors for supervision were recruited by the lead investigator.

Field work procedure: Data were collected at the same time by all data collectors at the study households, and simultaneously observation was made by the data collectors. The supervisors evaluated the performance of the day and improved the performance of data collection the next days.

3.8 Data quality assurance

Field workers training: The data collectors and the supervisors were trained together for two days on the data collection procedures by developing guidelines relevant to achieve the objectives of this study. They were also trained how to approach the selected households, how to record data, how to control missing data and how to put their observation for observational questions, and more over how to communicate field workers with supervisors.

Supervision: First the supervisor discussed with the lead investigator on how to supervise the data collectors so as to assure that the data collection activities were carried out according to the training guide line. Each supervisor monitored the data collectors assigned to him using supervisory check list on each day of the data collection and corrective measures were taken accordingly.

Translating and Pre-testing the questionnaire: The questionnaire was prepared originally in English and then translated into Amharic and retranslated into English by independent public health professionals. Most of the questions were adopted from other previously conducted similar studies. The questionnaire was administered to study participants in Amharic as they were Amharic speakers. Due to uncertainty of questionnaire design and the manner in which respondents are going to react to a

particular question, pre-test was done before engaging to full implementation of data collection. This process allowed for the identification of ambiguity in questions, misunderstood questions and questionnaire flow challenges. The pre-test was conducted by taking 5% of the sample size in kebeles adjacent to the study kebeles before commencing the research. Their responses were discussed so that modifications were made for the final tool.

Quality control: The responses of participants were checked by supervisors and the lead investigator by administering the questionnaire at the end of data collection to randomly selected 10% of the households already visited by the field workers Moreover, supervisors checked everything recorded by a field worker in each questionnaire on a daily basis with the objective of ensuring no data are missing and as a result data were precise and accurate. Field workers themselves have checked for internal consistency that is the extent to which the responses to different questions correlate each other during interviewing each recruited households so that they reconfirmed the responses of the interviewees.

3.9 Data processing and analysis

Data were coded, cleaned, entered and analyzed with SPSS version 16 for windows. Tables and figures were used to present the descriptive part of the result and crude and adjusted odds ratio with 95% confidence interval and p-value at 0.05 were calculated to ascertain the association between dependent and independent variables of the study.

3.10 Variables of the study

Dependent Variable: Satisfactory latrine utilization

Independent Variables:

Socio demographic and economic variables: Age, gender, income, educational status of husband and wife, head of households, family size, occupational status of spouses.

Environmental and behavioral factors: Condition of latrine, status of latrine, distance of latrine from household, duration of latrines owned by households, hand washing facilities, reasons for constructing latrines**,** perceived advantage of latrines, reasons for using latrine always.

3.11 Operational definition

1. Satisfactory latrine utilization – when all members of a household dispose their excreta in a functional latrine in a hygienic manner (36, 40).

2. Latrine utilization – households with functional latrine as measured by proxy indicators like presence of fresh excreta inside the pit (36).

3. Hygienic – there are no feaces on the floor, seat, around the squat hole, or super structure of the latrine including on the path along the way towards the latrine and there are no flies and undesirable bad smell around the latrine (40).

4. Functional latrine - a hygienic latrine providing service at the time of data collection which may or may not require maintenance (36, 40).

5. Non functional larine – a latrine that deviates from the criteria of a functional latrine, and also it is in need of urgent maintenance (36, 40).

6. Status of latrine – condition of latrine at the time of data collection which can either be maintained, or need maintenance (36).

4. Ethical considerations

Ethical approval was taken from Institutional Review Board of Institute of Public Health, University of Gondar. Then permission was secured from Dessie Town District Health Office and administration of the selected kebeles. Before inspection of the study households data collectors took verbal consent from the study participants. Each respondent was informed about the objective of the study and confidentiality of the information gathered was assured, and moreover respondents were assured their right to withdraw any time from the process when they felt uncomfortable with the process of data collection.

5. Dissemination of the results

The final report was presented and discussed at University of Gondar, College of Medicine and Health Sciences, Institute of Public Health as partial fulfillment of the degree of Master of Public Health. Copies of this paper were sent to Amhara National Regional Health Bureau and Dessie Town District Health Office. It was also being disseminated through publication on local or international journals and presentation on scientific conferences.

6. Results

6.1 Socio demographic Characteristics

A total of 820 households were included in this study and the response rate was found to be 97.2% (797 households). In these households data concerning latrine utilization were collected.

Out of the surveyed households 395(49.6%) were urban and 402(31.4%) were rural households. The mean age of respondents was 42 $\pm$ 14.3. Four hundred seventy nine (60.1%) of the respondents were Muslim, three hundred eleven (39%) Orthodox and the rest (0.9%) were protestant. Most of the respondents were Amhara in ethnicity 754(94.6%). Five hundred fifty two (69.3%) of the respondents were married. In the urban occupation was house wife for 222(56.2%) of the respondents and in the rural it was farmer for 236(29.6%) of the respondents. From the total respondents 401(50.3%) have no formal education. With regard to monthly income of respondents 103(60.1%) in the urban and 112(27.9%) in the rural study groups earn less than 350EB per month, 143(36.2%) in the urban and 194(24.3%) in the rural earn greater than 901EB per month [Table 1].

Table1: Socio demographic characteristics of respondents by place of residence in Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

		Urban(n1=395)		Rural(n2=402)		Total(n=797)	
Variables	**Variable category**	**N**	**%**	**N**	**%**	**N**	**%**
Age of respondents	18-31 years	110	27.8	89	22.1	199	25.0
	32-40 years	92	23.3	141	35.1	233	29.2
	41-52 years	77	14.5	85	21.1	162	20.3
	≥ 53 years	116	29.4	87	21.7	203	25.5
Family size	1-3	172	43.5	87	21.6	259	32.5
	4-5	170	43.1	153	38.1	323	40.5
	6+	53	13.4	162	40.3	215	27.0
Marital status	Married	277	70.1	325	80.8	552	69.3
	Single	29	7.2	7	1.7	36	4.5
	Wid/Div/Sep	149	37.7	70	17.5	209	26.2
Household head	Husband/Father	195	49.4	326	81.1	521	65.4
	Wife/Mother	158	40.0	71	17.7	229	28.7
	Others	42	10.6	5	1.2	47	5.9
Education of respondent	No formal education	188	47.6	213	53.0	401	50.3
	Primary education	55	13.9	156	38.8	211	26.5
	Secondary education	123	31.1	33	8.2	156	19.6
	≥12	29	7.4	0	0.0	29	3.6
Education of Spouse (n1=218, n2=329)	No formal education	59	27.0	177	53.8	236	43.1
	Primary education	37	17.0	132	40.1	169	30.9
	Secondary education	90	41.3	20	6.1	110	20.1
	≥12	32	14.7	0	0.0	32	5.9
Occupation of respondent	House wife	222	56.2	94	23.4	316	39.7
	Daily labourer	50	12.6	41	10.2	91	11.4
	Farmer	2	0.5	234	58.2	236	29.6
	Merchant	41	10.4	22	5.5	63	7.9
	Government employee	41	10.4	10	2.5	51	6.4
	Others	39	9.9	1	0.2	40	5.0
Occupation of Spouse (n1=218, n2=329)	House wife	20	9.2	176	53.5	196	35.8
	Daily labourer	32	14.7	8	2.4	40	7.3
	Farmer	6	2.7	119	36.2	125	22.8
	Merchant	76	34.8	18	5.5	94	17.2
	Government employee	64	29.4	8	2.4	72	13.2
	Others	20	9.2	0	0.0	20	3.7
Monthly Income of households	≤350EB	103	60.1	112	27.9	215	27.0
	351-600EB	92	23.3	134	33.3	226	28.4
	601-900EB	57	14.4	105	21.1	162	20.3
	≥ 901EB	143	36.2	51	12.7	194	24.3

6.2 Environmental and behavioral characteristics

Environmental Characteristics

From the total study households 749(94%) have simple pit latrines. Three hundred ninety five (98.3%) households in the rural have simple pit latrines and few 6(1.5%) and 1(0.25%) have VIP and water flush types of latrines respectively. In the urban households 28(7.1%) and 13(3.3%) water flush and VIP latrines were types of latrines respectively even though a great number of them were simple pit latrines, 354(89.6%). From the total, 608(76.3%) of latrines were constructed inside or attached to premises. The proportion of duration of owning latrine greater than or equal to two years was 85.57% for urban households and 53.48% for the rural households. From the total latrines surveyed, 200(50.6%) in the urban households and 241(60.0%) in the rural households were requiring maintenance. Hand washing facility was present for 230(58.2%) of the urban and 221(55%) of the rural households [Table2].

Table2: Environmental characteristics of study households with respect to condition of latrine by place of residence in Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

		Urban(n=395)		Rural(n=402)		Total(n=797)	
Variables	**Variable category**	**n**	**%**	**n**	**%**	**n**	**%**
Type of latrine	Pit latrine	354	89.6	395	98.3	749	94.0
	Others	41	10.4	7	1.7	48	6.0
Years since constructed	< 2years	57	11.4	187	46.5	244	30.6
	≥2years	338	85.6	215	53.5	553	69.4
Status of latrines	Maintained	195	49.4	161	40.0	441	55.3
	Need maintenance	200	50.6	241	60.0	356	44.7
Slab Sealed with mud	Yes	200	50.6	47	11.7	247	31.0
or cement	No	195	49.4	355	88.3	550	69.0
Hand washing facility	Present	230	58.2	221	55.0	451	56.6
	Absent	165	41.8	181	45.0	346	43.4
Distance of latrine	≤ 5meters	201	50.9	51	12.7	252	31.6
from the house	6-10 meters	112	28.4	154	38.3	266	33.4
	11-14 meters	20	5.0	33	8.2	53	6.6
	≥ 15meters	62	15.7	164	40.8	226	28.4
Squat hole cover	Present	199	50.4	49	12.2	248	31.1
	Absent	196	49.6	353	87.8	549	68.9
Path toward latrine clear	Yes	361	91.4	298	74.1	659	82.7
	No	34	8.6	104	25.9	138	17.3

From the total households with latrines surveyed, 344(87.1%) among the urban households and 301(74.9%) among the rural households were found to be providing service at the time of data collection using presence of fresh excreta in pit as a proxy indicator of utilization [Figure 2].

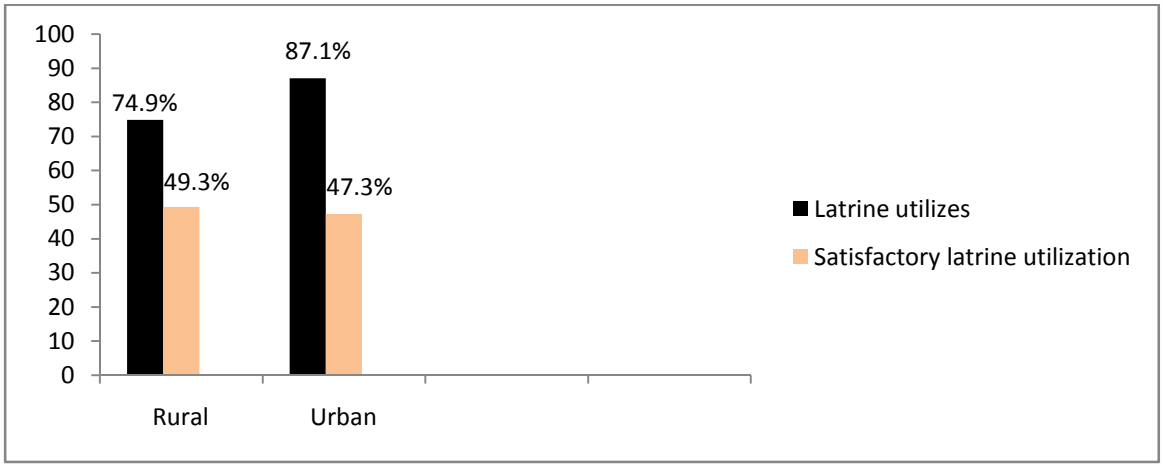

Figure2: Proportion of latrines providing service, and extent of utilization by category, Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

Behavioural characteristics

Three hundred twenty nine (79.85%) respondents in the urban described that no one has advised or forced them to construct latrine rather it is their self initiation. On the other hand 189(49.09%) of the rural study participants stated that they were advised by health extension workers to construct latrines. Only 12(2.91%) in the urban and 72(18.7%) in the rural complained that they were imposed by other bodies like local administrators to construct latrines [Table3].

Table3: Behavioral characteristics with respect to latrine utilization by place of residence in Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

Variables	Variable category	Urban(n1=395) n (%)		Rural(n2=402) n (%)		Total(n=797) n (%)	
Latrine use by >5 years	All family members	389	98.5	342	85.1	731	91.7
	Others	6	1.5	60	14.9	66	8.3
Latrine use by ≤ 5 children (n1=95, n2=126)	Yes	35	36.8	9	7.1	44	19.9
	No	60	63.2	117	92.9	177	80.1
Frequency of latrine use	Always	387	98.0	340	84.6	727	91.2
	Rarely	8	2.0	62	15.4	70	8.8
Reasons to construct latrine	Advice of health workers	38	9.6	189	47.0	227	28.5
	Self initiation	329	83.3	96	23.9	425	53.3
	Imposition of Kebele	12	3.0	72	17.9	84	10.5
	Others	16	4.1	45	11.2	61	7.7
Visible flies Seen around latrine	Yes	143	36.2	118	29.3	261	32.7
	No	252	63.8	284	61.7	536	67.3
Faeces seen in the house / in the compound	Yes	62	15.7	84	20.9	146	18.3
	No	333	84.3	318	79.1	651	81.7
Bad odor around Latrine	Yes	140	35.4	57	14.2	197	24.7
	No	255	64.6	345	85.8	600	72.3
Latrine clean	Yes	254	64.3	271	67.4	525	65.9
	No	141	35.7	131	32.6	272	34.1
Light Provision for night time Use	Yes	128	32.4	10	2.5	138	17.3
	No	267	67.6	392	97.5	659	82.7

Reasons for latrine utilization

Respondents were asked why they use latrine always. The reasons given by the respondents for using latrine always were; 52.3% because excreta dangerous, 23.2% because convenient place /privacy, and 17.2% because no other place to defecate [Figure 3].

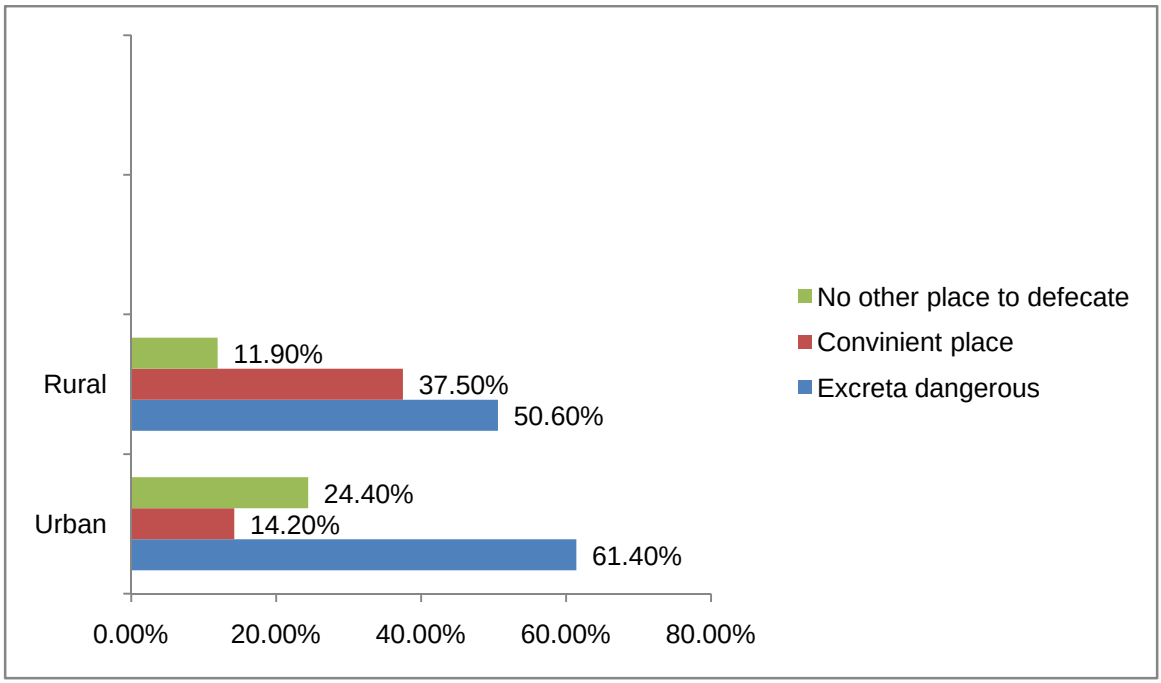

Figure 3: Reasons given for utilization of latrine always by category among households of Dessie Town district, Ethiopia, April 2012.

Respondents who reported not to utilize their latrine were further asked reasons why they did not construct a new latrine and the reasons given were lack of space 13 (25.5%), high cost 32(62.8%), I share with neighbors 2(3.9%), and I use public toilet 4(7.8%) for the urban study groups, and 15 (14.9%), 59 (58.4%), 25 (24.7%), and 2 (2.0%) for the rural study groups respectively.

6.3 Association of socio demographic characteristics of respondents in relation to the study groups

Selected socio demographic variables at the bivariate analysis to look for differences between the study groups were further analyzed using multivariate analysis. The rural households are more than four times more likely to have family size of greater

than 6 members than 1-3 members as compared to the urban households [(OR (95%CI) = 4.87(1.64, 14.41)]. With regard to educational level of respondents, the rural respondents are four times more likely to attend primary education than the urban respondents in relation [OR (95%CI) = 4.32(1.61, 11.55)]. But, they are less likely to attend educational level of secondary and above compared to the urban respondents [OR (95%CI) = 0.14((0.04, 0.51)]. This may reflect expansion of educational infrastructure in the country in the recent years [Table4].

Table 4: Association of selected socio demographic characteristics with respect to the study groups, Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

Variable	Variable category	Rural, n=402	Urban, n=395	COR(95%CI)	AOR(95%CI)
		n (%)	n (%)		
Family Size	1-3	87(21.6)	172(43.6)	1.00	1.00
	4-5	153(38.1)	170(43.0)	1.78(1.27, 2.50)**	1.05(0.42, 2.64)
	6+	162(40.3)	53(13.4)	6.04(4.04, 9.05)***	4.87(1.64, 14.41)**
Religion	Christian	62(15.4)	256(64.8)	1.00	1.00
	Muslim	340(84.6)	139(35.2)	10.10(7.19, 14.20)***	5.84(2.41, 14.20)***
Education of respondent					
	No formal education	213(53.0)	188(47.6)	1.00	1.00
	Primary education	156(38.8)	55(13.9)	2.5(1.74, 3.61)***	4.32(1.61, 11.55)**
	Secondary and above	33(8.2)	152(38.5)	0.19(0.13, 0.29)***	0.14((0.04, 0.51)**
Education of Spouse (n1=329 , n2=218)	No formal education	177(53.8)	59(27.1)	1.00	1.00
	Primary education	132(40.1)	37(16.9)	1.19(0.74, 1.90)	3.08(1.11, 8.55)*
	Secondary and above	20(6.1)	122(56.0)	0.06(0.03, 0.10)***	0.70(0.19, 2.57)

NB: * significant at P<0.05, ** significant at P<0.01, *** significant at P<0.001, COR= Crude Odds Ratio, AOR = Adjusted Odds Ratio
Note: Adjusted for socio demographic, environmental and behavioral characteristics

6.4 Association of environmental and behavioral characteristics in relation to the study groups

Some of the selected environmental and behavioral characteristics that differ significantly between the study groups include years since latrine constructed, status of latrine, and frequency of latrine use. A latrine is in need of maintenance more likely in rural households as compared to the urban households [OR (95%CI) = 6.97(2.55, 19.03)]. Distance of latrine from the household was another factor which

differs significantly between the study groups. Latrine use by >5years old was less likely among the rural households compared to the urban households [OR (95%CI) = 0.14 (0.03, 0.72]. Absence of bad odor around latrine was more likely among the rural study groups than the urban ones, which was again significantly associated [OR (95%CI) = 4.23(1.72, 10.4] [Table 5].

Table 5: Association of environmental and behavioral characteristics with respect to the study groups, Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

Variables		Rural, n=402 n (%)	Urban, n=395 n (%)	COR(95%CI)	AOR(95%CI)
Years since latrine constructed					
	<2years	187(46.5)	57(11.4)	5.16(3.66, 7.26)***	5.69(2.56, 12.65)***
	≥2years	215 (53.5)	338(85.6)	1.00	1.00
Status of latrine	Maintained	161(40.0)	195(49.4)	1.00	1.00
	Need maintenance	241(60.0)	200(50.6)	1.46(1.10, 1.93)**	6.97(2.55, 19.03)***
Distance of latrine from household					
	≤5meters	51(12.7)	201(50.9)	1.00	1.00
	6-10meters	154(38.3)	112(28.4)	5.42(3.66, 8.02)***	6.10(2.59, 14.36)***
	11-14meters	33(8.2)	20(5.0)	6.50(3.45, 12.27)***	4.18(1.00, 17.44)*
	≥15meters	164(40.8)	62(15.7)	10.43(6.82, 15.92)***	10.72(4.13, 27.8)***
Visible flies seen	Yes	118(29.3)	143(36.2)	1.00	1.00
	No	284(61.7)	252(63.8)	1.37(1.02, 1.84)*	1.67(1.02, 2.7)***
Bad odor	Yes	57(14.2)	140(35.4)	1.00	1.00
	No	345(85.6)	255(64.6)	3.32(2.35, 4.71)***	4.23(1.72, 10.4)**
Latrine use by >5 years					
	All family members	342(85.1)	389(98.5)	0.09(0.04, 0.21)***	0.14(0.03, 0.72)*
	Others	60(14.9)	6 (1.5)	1.00	1.00
Path toward latrine clear					
	Yes	298(74.1)	361(91.4)	1.00	1.00
	No	104(25.9)	34(8.6)	3.71(2.44, 5.62)***	3.00(1.09, 8.25)*

NB: * significant at P<0.05, ** significant at P<0.01, *** significant at P<0.001, COR= Crude Odds Ratio, AOR = Adjusted Odds Ratio

Note: Adjusted for socio demographic, and environmental and behavioral characteristics

6.5 Socio demographic, environmental and behavioral factors associated with the extent of latrine utilization

Bivariate and multivariate logistic regressions were used to predict households with satisfactory latrine utilization from those households with unsatisfactory latrine utilization.

Socio demographic factors: A few socio demographic characteristics of study participants like monthly income, and education of respondent were associated with the extent of latrine utilization but residence, being an urban or rural dweller was not significantly associated with latrine utilization. Households with family size less than or equal to 3 are more likely to have satisfactory latrine utilization compared to households with family size greater than six members [OR (95%CI = 1.59(1.06, 2.39)]. Households earning monthly income of 601-900EB were six times more likely to have satisfactory latrine utilization than those earning less than 350EB [OR95%CI = 6.19(3.41, 11.25)]. Satisfactory latrine utilization was also significantly associated with the respondent's educational level [OR (95%CI) = 1.67(1.06, 2.63)] [Table 6].

Table6: Association of selected socio demographic factors with the extent of latrine utilization; Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

Variable		Urban utilization n=395		Rural utilization n=402		Both , n=797	Both, n=797
		Satisfactory utilization		Satisfactory utilization			
		Yes n =187 (no/%)	No n=208 (no/%)	Yes n=198 (no/%)	No n=204 (no/%)	COR (95%CI)	AOR (95%CI)
Family size	1-3	60(32.1)	112(53.8)	61(30.8)	26(12.7)	1.37(0.95, 1.97)	1.59(1.06,2.39)**
	4-5	93(49.7)	77(37.1)	87(43.9)	66(32.4)	1.96(1.38, 2.79)***	1.80(1.24, 2.61)**
	6+	34(18.2)	19(9.1)	50(25.3)	112(54.9)	1.00	1.00
Monthly Income							
	≤ 350EB	22(11.8)	81(38.9)	22(11.1)	90(44.1)	1.00	1.00
	351-600EB	27(14.4)	65(31.3)	62(31.3)	72(35.3)	2.53(1.65, 3.86)***	2.07(1.16, 3.70)*
	601-900EB	29(15.5)	28(13.5)	75(37.9)	30(14.7)	6.97(4.39, 11.06)***	6.19(3.41, 11.25)***
	≥ 901EB	109(58.3)	34(16.3)	39(19.7)	12(5.9)	12.50(7.83,19.97)***	13.16(6.56, 26.41)***
Education level							
	No formal education	73(39.0)	115(55.3)	83(41.9)	130(63.7)	1.00	1.00
	Primary education	23(12.3)	32(15.4)	91(46.0)	65(31.9)	1.85(1.32, 2.59)***	1.67(1.06, 2.63)*
	Secondary or above	91(48.7)	61(29.3)	24(12.1)	9(4.4)	2.58(1.80, 3.69)***	1.06(0.60, 1.86)
Spouse Occupation							
	House wife	8(6.9)	12(11.8)	88(51.2)	88(56.1)	1.00	1.00
	Farmer	3(2.6)	3(2.9)	64(37.2)	55(35.0)	1.20(0.77, 1.89)	1.74(1.04, 2.91)*
	Merchant	50(43.1)	26(25.5)	10(5.8)	8(5.1)	1.84(1.11, 3.05)*	1.01(0.55, 1.85)
	Gov Employee	38(32.7)	26(25.5)	7(4.1)	1(0.6)	1.74(1.00, 3.02)	0.64(0.31, 1.30)
	Others	17(14.7)	35(34.3)	3(1.7)	5(3.2)	0.52(0.28, 0.95)*	0.59(0.30, 1.18)

NB: * Significant at p<0.05, ** Significant at p<0.01, *** Significant at p<0.001
COR=Crude Odds Ratio, AOR=Adjusted Odds Ratio
Note: Adjusted for socio demographic, environmental and behavioral variables

Environmental and behavioral factors:

Some of the environmental and behavioral factors that have association with the extent of latrine utilization include status of latrine, distance of latrine from the household, and slab sealed with mud /cement. Households having maintained latrines are about more than three times more likely to have satisfactory utilization of

latrine than those households with latrines requiring maintenance [(AOR (95%CI) = 3.56(2.47, 5.13)]. Households having latrines with slabs sealed with mud or cement are more likely to have satisfactory utilization of latrine than those households having latrines with slabs not sealed with mud/cement [OR (95%CI) = 1.89(1.27, 2.82]. Distance of latrine from the household was also another factor found to be statistically associated. Households whose latrines are located within 6-10meters from their house are two times more likely to have satisfactory latrine utilization compared to households with latrines located greater than 10meters [OR (95%CI) = 2.22(1.23, 3.99)] [Table 7].

Table 7: Association of selected environmental characteristics with extent of latrine utilization, Dessie Town district, Eastern Amhara, April 2012.

Variable	Urban utilization n=395		Rural utilization n=402		Both, n=797	Both, n=797
	Satisfactory		Satisfactory			
	Yes n=187 n (%)	No n=208 n (%)	Yes n=198 n (%)	No n=204 n (%)	COR(95%CI)	AOR(95%CI)
Status of latrine						
Maintained	147(41.3)	48(13.5)	108(30.3)	53(14.9)	6.04(4.44, 8.22)***	3.56(2.47, 5.13)***
Need maintenance	40(9.1)	160(36.3)	90(20.4)	151(34.2)	1.00	1.00
Slab sealed with mud/cement Yes	134(54.3)	66(26.7)	37(15.0)	10(4.0)	3.53(2.57, 4.87)***	1.89(1.27, 2.82)**
No	53(9.6)	142(25.8)	161(29.3)	194(35.3)	1.00	1.00
Distance of latrine from household						
≤ 6meters	149(36.9)	129 (31.9)	79(19.6)	47(11.6)	4.44(2.91, 6.79)***	1.83(1.05, 3.20)*
6-10meters	29(12.2)	47(19.7)	93(39.1)	69(29.0)	3.61(2.29, 5.68)***	2.22(1.23, 3.99)**
≥ 10meters	9(5.8)	32(20.6)	26(16.8)	88(56.8)	1.00	1.00
Location of Latrine						
Inside/attached to premises	178(29.3)	163(26.8)	148(24.3)	119(19.6)	2.55(1.80, 3.60)***	1.71(1.07, 2.71)*
Outside premises	9(4.8)	45(23.8)	50(26.5)	85(44.9)	1.00	1.00

NB: *Significant at p<0.05, ** Significant at p<0.01 *** Significant at p<0.001
COR=Crude Odds Ratio, AOR=Adjusted Odds Ratio
Note: Adjusted for socio demographic, environmental and behavioral variables

6.6 Comparison of association of factors with the extent of latrine utilization

Socio demographic factors: Socio demographic factors were analyzed for the two study group's separately in relation to the extent of latrine utilization. Monthly household income in both of the study groups was significantly associated with the extent of latrine utilization. Households earning monthly income between 351 and 600EB are more likely to utilize latrine satisfactorily than those households earning a monthly income of less than 350EB in both urban and rural study groups [OR (95%CI) = 2.07(1.16, 3.70), 2.20(1.09, 4.45) respectively].

Educational status of the respondent was found to be significantly associated for urban study groups but not for the rural study groups. Respondents who attended primary education are more likely to have satisfactory latrine utilization compared to those respondents with no formal education among the urban study groups [OR (95%CI) = 1.67(1.06, 2.63)] [Table8].

Table 8: Comparison of selected socio demographic characteristics associated with the extent of latrine utilization between urban and rural households in Dessie Town district, Eastern Amhara, April, 2012.

	Urban Utilization				Rural Utilization			
	Satisfactory				Satisfactory			
Variable	Yes n=187 n (%)	No n=208 n (%)	COR(95%CI)	AOR(95%CI)	Yes n=198 n (%)	No n=204 n (%)	COR (95%CI)	AOR (95%CI)
Family size								
1-3	60(32.1)	112(53.8)	0.30(0.16, 0.57)***	2.61(1.50, 4.55)**	61(30.8)	26(12.7)	5.26(2.28, 9.27)***	7.36(3.35, 16.14)***
4-5	93(49.7)	77(37.1)	0.68(0.36, 1.28)	2.13(1.34, 3.40)**	87(43.9)	66(32.4)	2.95(1.86, 4.69)***	3.69(2.06, 6.61)***
6+	34(18.2)	19(9.1)	1.00	1.00	50(25.3)	112(54.9)	1.00	1.00
Monthly Income								
≤ 350EB	22(11.8)	81(38.9)	1.00	1.00	22(11.1)	90(44.1)	1.00	1.00
351-600EB	27(14.4)	65(31.3)	1.53(0.80, 2.90)	2.07(1.16, 3.70)*	62(31.3)	72(35.3)	3.52(1.98, 6.27)***	2.20(1.09, 4.45)*
601-900EB	29(15.5)	28(13.5)	3.8(1.89, 7.69)***	6.19(3.41, 11.25)***	75(37.9)	30(14.7)	10.23(5.45,19.2)***	8.51(4.03, 17.94)***
≥ 901EB	109(58.3)	34(16.3)	11.80(6.4, 21.69)***	13.16(6.56, 26.4)***	39(19.7)	12(5.9)	13.3(5.99,29.51)***	8.56(3.36, 21.78)***
Education of Res								
No formal education	73(39.0)	115(55.3)	1.00	1.00	83(41.9)	130(63.7)	1.00	
Primary education	23(12.3)	32(15.4)	1.13(0.62, 2.09)	1.67(1.06, 2.63)*	91(46.0)	65(31.9)	2.19(1.44, 3.34)***	_____
Secondary/above	91(48.7)	61(29.3)	2.35(1.52, 3.64)***	1.06(0.60, 1.86)	24(12.1)	9(4.4)	4.18(1.85, 9.43)**	

NB: *Significant at p<0.05, ** Significant at p<0.01 *** Significant at p<0.001

COR=Crude Odds Ratio, AOR=Adjusted Odds Ratio

Note: Adjusted for socio demographic, environmental and behavioral variables

Environmental and behavioural factors: When the selected environmental and behavioural variables were analysed separately for the two study groups, status of latrine whether it is maintained or not was one of these variables found to be a predictor of extent of latrine utilization only for the urban study groups. Households having maintained latrine are three times more likely to have satisfactory latrine utilization than households with latrines requiring maintenance among the urban households [OR (95%CI) = 3.20(2.01, 5.08)]. Similarly households having slab sealed latrines (with mud or cement) are more likely to have satisfactory latrine utilization than those with households with latrine whose slab is not sealed [OR (95%CI) = 2.84(1.62, 4.97)]. This was significantly associated for the urban households, but not for the rural households. Respondents who construct latrine as a result of imposition by kebele or local administrators are less likely to have satisfactory utilization of latrine as compared to those who construct hearing advice of health workers among both, urban and rural study groups [OR (95%CI) = 0.04 (0.01, 0.46), 0.09 (0.03, 0.32)respectively] [Table 9].

Table 9: Comparison of selected environmental and behavioural characteristics associated with the extent of latrine utilization between urban and rural households in Dessie Town district, Eastern Amhara, Ethiopia, April 2012.

Variable	Urban				Rural			
	Satisfactory Utilization				Satisfactory utilization			
	Yes n=187 n (%)	No n=208 n (%)	COR(95%CI)	AOR(95%CI)	Yes n=197 n (%)	No, n=204 n (%)	COR(95%CI)	AOR(95%CI)
Status of latrine								
Maintained	147(78.6)	48(23.1)	12.25((7.61,19.71)***	3.20(2.01, 5.08)***	108(54.5)	53(26.0)	3.42(2.25, 5.20)***	
Need maintenance	40(21.4)	160(76.9)	1.00	1.00	90(45.5)	151(74.0)	1.00	_____
Slab sealed with mud/cement								
Yes	134(71.7)	66(31.7)	5.44(3.53, 8.38)***	2.84(1.62, 4.97)***	37(18.7)	10(4.9)	4.46(2.15, 9.24)***	_____
No	53(28.3)	142(28.3)	1.00	1.00	161(81.3)	194(95.1)	1.00	
Reasons for using latrine always								
Excreta dangerous	134(71.7)	108(52.2)	3.34(1.99, 5.60)***	3.82(2.07, 7.02)***	109(55.3)	65(44.2)	2.14(1.08, 4.27)*	_____
Convenient/Privacy	27(14.4)	29(14.0)	2.51(1.26, 5.00)**	2.87(1.42, 5.80)***	70(35.6)	59(40.1)	1.52(0.75, 3.08)	
No other place to defecate	26(13.9)	70(33.8)	1.00	1.00	18(9.1)	23(15.7)	1.00	
Reasons to construct latrine Advice of HWs	21(11.2)	17(8.1)	1.00	1.00	103(52.0)	86(42.2)	1.00	1.00
Self initiation	162(86.6)	167(80.3)	0.79(0.40, 1.54)	0.87(0.38, 1.98)	63(31.8)	33(16.2)	1.59(0.96, 2.65)	1.14(0.83, 2.51)
Imposition of kebele	1(0.6)	11(5.3)	0.07(0.01, 0.63)*	0.04(0.01, 0.46)**	4(2.1%)	68(33.3)	0.05(0.02, 0.14)***	0.09(0.03, 0.32)***
Others	3(1.6)	13(6.3)	0.19(0.05, 0.76)*	0.07(0.01, 0.31)**	28(14.1)	17(8.3)	1.38(0.71, 2.68)	1.16(0.58, 2.30)

NB: *Significant at p<0.05, ** Significant at p<0.01 *** Significant at p<0.001

COR=Crude Odds Ratio, AOR=Adjusted Odds Ratio

Note: Adjusted for socio demographic, environmental and behavioral variables

Others: mainly receiving slab

7. Discussion

There was no significant difference in latrine utilization and extent of latrine utilization between the urban and rural study groups. This could be because the rural households of the district have a relatively greater access to socio economic, health services and other infrastructures than other remote rural households in other districts of South wollo Zone. The other reason could be because of the impact of the HEP which might have improved latrine utilization as well as extent of latrine utilization among the rural households in the district. This finding showed that major reasons explained by study participants to utilize latrine were excreta dangerous to health (52.3%), convenient place (23.2%) and no other place to defecate (17.2%) which is supported by a similar with a study conducted in Hullet Eju Enessie district where the reasons given were (49.7%), (39.2%), and (11.1%) respectively (36). However the extent of latrine utilization in the same study among 500(60.7%) households with latrines was shown to be satisfactory which is higher than this study where the extent of latrine utilization found to be satisfactory among the urban and rural households were 187(47.3%) and 198(49.3%). Such a difference can be explained by a difference in methodology used by the two studies and also by a difference in the socio cultural setting of the two study areas. The proportion of latrines surveyed having hand washing facility was 58.2% (230) and 55% (221) among the urban and the rural study households respectively. This finding was much higher than a finding in Mirab Abaya; SNNPR which 6% of latrines surveyed had hand washing facility (17). This can be due to the fact that currently the country has progressed much on expansion of sanitation facilities through the HEP and it was long since the study conducted in Mirab Abaya (17, 36).

Comparison of the two study groups indicated that the rural households are less likely to have a maintained latrine than the urban households. This can be due to the difference in educational of the respondents of the study groups predicted at the comparison of the two groups, i.e. the rural respondents were less likely to attend educational level of secondary and above compared to the urban respondents. The rural households are more likely to locate latrines far apart from their dwelling than

the urban household and such a factor was identified to decrease the likely hood of satisfactory latrine utilization according to this finding. This finding was supported by a similar study on latrine utilization in that latrines constructed were far from the recommended distance which is 6meters from the house and these latrines were not totally usable (12). So, more emphasis should be given to the rural households than the urban when construction of latrines so that latrines should not be far apart from the house. Bad odor around latrine was among the factors that reduced the likely hood satisfactory latrine utilization among the urban households as compared to the rural households. This could be because of sharing of a latrine more than one household among the urban households.

Based on the results of multivariate analysis (done for both groups together) study participant with primary education, had more satisfactory utilization of latrine than those study participants with no formal education [OR (95%CI) =1.67(1.06, 2.63)]. This could be because educated people have better access to information and health services and are more likely to obey(comply with) the information accessed than those with no formal education. Similarly respondents with higher income had more satisfactory utilization of latrine than their counter parts. This was supported by a finding on a similar study where people do not give priority for latrine construction and maintenance when there is competition for resources, this is the reason why a number of latrines observed are half constructed and do not have permanent roofs and doors (32, 33). In this analysis location of latrine or place of latrine construction was found to be significant predictor of larine utilization in the multivariate analysis. Households whose latrines were located inside their premises were more likely to have satisfactory utilization of latrine than households whose latrines were located outside their premises. This finding was supported by a similar study of hygiene behavior and latrine use conducted at Siasa, Kenya (41). The finding identified that people were discouraged from using latrines for latrines located out of their premises. In this finding, years since latrine constructed or duration of latrine was not found to be significant even though it was significant in a similar study in Hullet eju Enessie district (36). This could be explained by a difference in the design of the

study and socio economic and cultural variations between participants of the two studies. Distance of latrine from the household was also found to be a predictor of latrine utilization where households having latrines with less than 10 meters are about two times more likely to have satisfactory utilization of latrine than households with latrines of grayer than 10 meters from their households. The farther the distance of latrine from the dwelling room the more likely to used and cleaned regularly by members of the household, thus ultimately decreasing the likely hood of satisfactory larine utilization. In this multivariate analysis the extent of latrine utilization was more satisfactory for households having slab sealed with mud/cement latrines than their counter parts, this is because slab sealed with mud/cement encourage owners or users of latrine to clean regularly which ultimately increases the likely hood of satisfactory latrine utilization.

Multivariate analysis for the two study groups was done separately for comparison of factors affecting extent of latrine utilization between the study groups. Among the socio demographic variable monthly income was associated with satisfactory latrine utilization in both study groups; however education of respondent was associated with satisfactory latrine utilization only among the urban study groups. This can be because the urban respondents do have more access to educational infrastructure and health information than the rural respondents. So access to health information with regard to latrine utilization should be directed more to the rural than the urban community.

This analysis has identified reason for constructing latrines as a factor increasing the likely hood of satisfactory latrine utilization in both of study groups. Those respondents who construct latrine as a result of imposition from local administrators are less likely than those who construct hearing advice of health workers among both of the study groups which is supported by a study on latrine utilization where latrines constructed by rural households based on a fear of sanctions or some form of punishment rather than on adherence to good hygiene and sanitation practices led to low utilization of latrines, and low levels of behavioral change (17). This could be because people do not comply with interventions which they do not believe in, or

in other words sanction in some intervention may not give the intended result. So imposition to construct latrine should not be encouraged according to the findings of this study as it decreases the likely hood of satisfactory latrine utilization. Maintained latrine, slab sealed with mud/cement latrine, and excreta dangerous as a reason for using latrine always increase the likely hood of satisfactory latrine utilization among the urban study groups, but not among the rural study groups. This can be because maintained latrines and slab sealed latrines increase the likely hood of convenience /privacy while defecating, desire to maintain cleanliness of latrines respectively which might ultimately increase the likely hood of satisfactory latrine utilization. Therefore programs working in urban areas should focus more towards sealing slabs of latrines and encouraging maintenance of latrines.

8. Limitations of the study

Utilization of latrine was measured using proxy indicators like presence of fresh excreta inside the pit rather than actual observation of latrine use by members of a household. The rural households of Dessie ketema district are not as remote as rural households in other ditricts of South wollo Zone which might have a relatively greater access to socio economic health service and educational infrastructure. The study design was cross sectional, which measures the exposure and outcome simultaneously but cannot measure the cause and effect relationship. The other limitation faced was absence of a study done before on similar topics with the same study design, I. e. comparative cross sectional study design, making discussion of the current finding difficult.

9. Conclusion

Based on the findings of this study we can conclude that:

- There is no statistically significant difference between the urban and the rural households of Dessie ketema district in terms of latrine utilization and its extent of utilization.
- Respondents who construct latrine as a result of imposition from local administrators are less likely to have satisfactory latrine utilization than those who construct hearing advice of health workers.
- Monthly income was associated for both of the study groups while education of the respondent only for the urban households was associated with the extent of latrine utilization.
- Reasons to construct latrine for both of the study groups and slab sealed latrine and reasons for using latrine always among the urban study groups were factors affecting how satisfactory is latrine utilization.

10. Recommendation

Based on utilization of latrine and associated factors identified in this study, the following are the recommendations forwarded for concerned bodies.

To all concerned bodies and stakeholders:-

- It is essential that if responsible bodies design strategies that help to reduce imposition of households to construct latrines.
- It is better if urban households are encouraged to maintain latrines and seal slabs of latrines with mud or cement.
- Concerned bodies better work on increasing know how of the extent to which excreta are dangerous for health to the urban community so that they utilize latrine always.
- Latrine construction need not be far apart from the household.
- There is a need to encourage households to construct latrines inside their premises.
- When constructing latrines households better be encouraged to plaster the slab with mud or cement.

11. References

1. Hutton G, Bartram J. Global cost of attaining the Millennium Development Goal for water supply and sanitation. *Bulletin of the World Health Organization*. 2008.86(1):1-80.

2. UNICEF, WHO. Joint Monitoring Programme for Water Supply & Sanitation (JMP). 2010. 6-30. Available from: http://www.who.int/water_sanitation_health/publications/9789241563956/en/index.html. .accessed on 10/02/2012.

3. WHO. Water supply and Sanitation Status in the South Asian Region. 2010.107-8.Available from: http://www.searo.who.int/en/Section23/Section 1000_15447htm. .accessed on 11/02/2012.

4. Ethiopia Country Statement for Sanitation and Water for All High Level Meeting, 20 April 2012 Washington, DC. Available at

5. Jabu G. Assessment and comparison of microbial quality of drinking water in Chikwawa. 2006. Available from: http://www.poly.ac.mw/centres/washted/images/pdfs /irish.post graduate.conference.paper.pdf. .accessed on 12/02/2012.

6. Hill Z, Bartram. J. Water supply and sanitation; Hygiene and sanitation promotion: why promote sanitation? 2002.143(6):608.

7. UNEP, UNICEF, WHO. Children in the new millennium: Environmental impact on health. 2002. Available from: http://www.unep.org/ceh/children.pdf. .accessed on 06/01/ 2012.

8. World Bank. Water, sanitation & hygiene at glance. Available from: www.worldbank.org/hnp. . accessed on 12/02/2012.

9. Ezzati M, Lopez A, Rodgers A, Hoorn S, Murray C, Group T. Selected major risk factors and global and regional burden of disease. Lancet 2002. 2002.360:1347–60.

10. Esrey S, Potash J, Roberts L, Shiff C. Effects of Improved Water Supply and Sanitation on Ascariasis, Diarrhea, Dracunculiasis, Hookworm Infection, Schistosomiasis, and Trachoma. *WHO Bulletin* 1991.69(5).609–21.

11. Hutley S.R.A., Morris S.S, Pisana V. Prevention of Diarrhea in Young Children in Developing Countries. *WHO Bulletin.*1997. 75(2):163–74.

12. Hutton G, Haller L, Bartram J. Global cost-benefit analysis of water supply and sanitation interventions. *J Water Health*. 2007. 5(4):481-502.

13. Varley R, Tarvid J, Chao D. A reassessment of the cost-effectiveness of water and sanitation interventions in programmes for controlling childhood diarrhoea. *Bull World Health Organization*. 1998.76:617-31.

14. United Nations. Millennium Project. Health, Dignity, and Development: What will it take? 2010; Available from: http://www.unmillenniumproject.org/documents/WaterComplete-lowres.pdf. .accessed on 12/02/2012.

15. Ethiopia. Global Sanitation Fund Water Supply & Sanitation Collaborative Council Sanitation Sector Status and Gap Analysis.2009; Available from: http://www.wsscc.org/sites/default/files/gsf_ethiopia_sector_review.pdf. .accessed on 12/02/2012.

16. Kemal R. Access to and utilization of information on Sanitation and Hygiene by rural households in Alaba special district, Southern Ethiopia. *J Hum Ecol*. 2010.32(2):101-12.

17. Tefera B, Welle K. Policy and institutional factors affecting formulation and implementation of Sanitation and Hygiene strategy. 2008. Available from: http://www.rippleethiopia.org/documents/stream/20080829-wp1-policy-issues-in-sanitation. . accessed on 19/02/2012.

18. O'Loughlin R, Fentie G, Flannery B, Emerson P. Follow-up of a low cost latrine promotion programme in one district of Amhara, Ethiopia: characteristics of early adopters and non-adopters. *Tropical Medicine and International Health*. 2006.11(9):1406–15.

19. Ahmed F, Clemens JD, Rao MR, Banik AK. Family latrines and pediatric shigellosis in rural Bangladesh: benefit or risk? *Int J Epidemiol*. 1994.23(4):856-62.

20. Nanan D, White F. Water, sanitation, and hygiene evaluation issues. *Bulletin of World Health Organization*.2002.80(1):75.

21. Fewtrell L, Kaufmann R, Kay D, Enanoria W, Haller L, Colford J. Water, sanitation, and hygiene interventions to reduce diarrhea in less developed countries: a systematic review and meta-analysis *Lancet Infectious Diseases*. 2005.5(1):42-52.

22. Park K. Communication for health education Park's Text book of preventive and social medicine: Bhanot Publications.2007.

23. Park K. Health care of the community In: Park's text book of preventive and social medicine: *Bhanot Publications*; 2007.

24. WHO. Water and Health--two precious resources linked to one another. Water for Health; World Water Day. 2001. Available from: http://www.who.int/water_sanitation_health/takingcharge.html. . accessed on 12/02/2012.

25. Mertunes TE, Jafar S, Fernando MA, Cousens SN, Feachem RG. Excreta disposal behavior and latrine ownership in relation to the risk of childhood diarrhea in Sir Lanka.Int *J Epidimiol*. 1992. 21.1157.

26. Baltazar JC, Solon FS. Disposal of faeces of children under two years old and diarrhea incidence: a case control study. *Int J Epidimol*. 1989.18((4 Suppl. 2)):16-9.

27. EFMOH.URBAN SANITATION. 31 August 2009. Available from: http://www.wsscc.org/sites/default/files/ethiopia_presentation_fmoh_urban_sanitation_2009.pdf. .accessed on 02/01/2012.

28. Conville M. Incorporating gender issues in designing of sanitation facilities. How to Promote the Use of Latrines in Developing Countries. 2003. Available from: http://www.cee.mtu.edu/sustainable_engineering/resources/technical/latrine_promotion_FINAL.pdf. . accessed on 10/01/2012.

29. USF, University of South Flourida. Incorporating issues of gender into design of latrine. 2008. Available from: http://usfmi.weebly.com/uploads/5/3/9/2/5392099/7_-incorporating_issues_of_gender_into_design_of_latrine_samantha_spedoske.pdf. .accessed on 12/02 2012.

30. Manase G, Nkuna Z, Ngorima E. Using water and sanitation as an entry point to fight poverty and respond to HIV/AIDS. 2009.34(13-16):866-73.

31. Chaggu E, Mashauri DA, Letinga G. Excreta Disposal in Dares-Salaam. *Environmental Management*. 2007. 30(5).609–20.

32. Sanitation and hygiene in developing countries. A case study from Burkina Faso. Identifying and responding to barriers. 2007. Available from: http://www.odi.org.uk/resources/docs/3998.pdf. .accessed on 25/02/2012

33. Kamla R, Geetardeshi P. A Case Study from Yavatmal District, Maharashtra, India Women in Total Sanitation Campaign. *J Hum Ecol*. 2009.25(2):79-85.

34. Admassu M, Wubshet M, Tilaye T. Sanitary Survey in Gondar Town. EthiopJHealth Dev. 2004.18(1):39-42.

35. Simmsa V, Makalo P, Baileya R, Emerson P. Sustainability and acceptability of latrine provision in The Gambia. *Transactions of the Royal Society of Tropical Medicine and Hygiene*. 2005. 99:631-7.

36. Anteneh A, Kume A. Assessment of impact of latrine utilization on Diarrheal diseases in the rural community of Hulet Ejju Enessie District, Amhara Regional State. *Ethiop J Health Dev*. 2010.24(2):110-8.

37. Charles P, Lulseged S, Kitsela T. Epidemiology and Ecology of Health and Disease in Ethiopia. Addis Ababa. Addis Ababa: Shama Books; 2006. Available from: http://books.google.com.et/books?id=bu6HGAAACAAJ&sitesec=reviews. .accessed on02/02/2012.

38. Status of water use sanitation and hygienic condition of urban slums. A study on Rupsha Ferighat slum, Khulna.
Available from: worldwidescience.org/topicpages/.../vulnerable+slum+communities. .accessed on 12/02/2012.

39. Ngondi J, Teferi T, Gebre T, Shargie E, MZerihun, Ayele B. Effect of a community intervention with pit latrines in five districts of Amhara, Ethiopia. *Tropical Medicine and International Health*. 2010. 15(5):592–9.

40. Legesse W, Gebre-Selassie S. Sanitary survey of residential areas using Ascaris lumbricoides ova as indicators of environmental hygiene, Jimma, Ethiopia. *EthiopJHealth Dev*. 2007.21(1):3-11.

41. Mengistie B, Baraki N. Community based assessment on household management of waste and hygiene practice in kersa woreda, Eastern Ethiopia. *Ethiop. J.Health Dev*.2010; 24(2): 103 – 109.

12. Annexes

I. English questionnaire

Name of Kebele/Got_____

Household No._____

Verbal Consent Letter

Dear interviewee, I extend my greeting to you. I am here to collect latrine related datafor the purpose of research from University of Gondar. The aim of this Study is to assess and compare the extent of latrine utilization and associated factors among the urban and rural households of Dessie ketema district. I am requesting your permission to participate in an interview on issues related to the factor that affect latrine utilization. This information will help the policy makers and other responsible bodies as background to improve the health status of the rural community related with proper utilization of latrines. We assure you that whatever information you provide will only be used for the purpose of this research and will not be made available to anyone outside of the research team.

Your willingness and support to respond the interview is very much appreciated.
I also assure you that the interview process will not bring any harm to you and your family. It is also your right to withdraw any time from the process when your feeling is uncomfortable with it.

Please make (X) mark to indicate the respondents' decision regarding participation in the study.

The purpose of the study and confidentiality procedures has been explained to me and I on my own consent: a) Agree _____ b) Disagree_____

Interviewer name_____ Signature_____

Date of interview _____

Time started_____ Time completed_____

Result of interview: 1. Completed 2. Respondent not available

3. Refused 4. Incomplete

Checked by supervisor: Name_____ Signature_____

Date_____

Additional instructions to the Interviewers:

1. The interview will continue only after the respondent has agree on the consent
2. Fill the questionnaire only with pen
3. Circle the answer from the options of possible responses
4. Strictly follow the skipping pattern

QUESTINNAIRE FOR THE ASSESSMENT OF FACTORS AFFECTING UTILIZATION OF LATRINE AMONG URBAN AND RURAL HOUSEHOLDS OF DESSIE KETEMA DISTRICT

S.N.	Questions	Responses	Skipping Responses	Response Code
Part I: Socio Demographic and economic Factors				
001	How many family members do you Have?	_____		
002	The sex of the respondents?	1. Male 2. Female		
003	Age of the respondent?	_____		
004	What is your religion?	1. Orthodox 2.Muslim 3. Protestant 99.Others/specify -----		
005	What is your ethnicity?	1. Amhara 2.Tigrie 99.Others/specify--		
006	What is your job? (mother)	1.House wife 2.Daily laborer 3. Farmer 4.Government employee 5. Merchant 6. “Tella” seller 99.Other/specify-		
007	What is your education	1. Illiterate 2. Able read and write		

	level?	3. 1-6 4. 7-8 5. 9-10 6. 11-12 99. Other/specify _____		
008	Who is the head of the family?	1. Husband 2. Wife 99. Other/Specify	If other skip to Q 012	
009	Marital status?	1. Married 2.Widowed 3.Unmarried 4.Separated 5. Divorced		
010	What is your spouse's education Level?	1. Illiterate 2. Able read and write 3. 1-6 4. 7-8 5. 9-10 6. 11-12 99.Other/ Specify _____		
011	What is your spouse's job? (father)	1. Farmer 2. Daily laborer 3. Merchant 4. Government employee 99. Other/Specify---------		
012	What is the monthly income of the family?	---------- (EB)		

Part II: Excreta disposal system and adults latrine utilization

201	What type of latrine do you have?	1. Pit latrine 2. VIP latrine 3. Water flush system 4. others/specify_____		
202	How many households share this latrine facility?	1. Not shared 2. 2-3 households 3. 4 or more households 99. Other/Specify---------		
203	How many years since latrine was Constructed?	Specify in month/ year ____/____		
204	Where it is constructed?	1. Inside or attached to premises 2. Outside the premises		

		3. Other/ specify----------		
205	What were your reasons to construct Latrines?	1. Advice from health workers 2. Self initiation 3. Seeing others 4. Imposition from local kebele 5. As we received slab free of charge 99. Others/specify_____		
206	What is the condition of the latrines? Make a tick mark if there is one	1.Having super structure ------ 2. Having doors ---------- 3. Having hand washing facilities ----- 4. Having light arrangements -------- 5. Having proper path to access ------ 99. Other/Specify----------		
207	Is the latrine Functional?	1. Yes 2. No	If no skip to Q209	
208	If it is not functional what are your reasons for not constructing a new latrine?	1.Lack of space 2.High cost 3. I share with neighbors latrine 4.I use public toilet		
209	Is this latrine facility construction subsidized?	1. Yes 2. No	If yes skip to Q211	
210	Which part/parts of the latrine subsidized? Make a tick mark if more than one is so.	1. slab -------- 2. roof /door ------- 3. excavation -------- 4. pit wall ------ 5. shelter wall ------ 6. whole superstructure ------ 7. whole latrine ----- 99. Other (specify)----------		
211	What is the status of latrine?	1. Maintained 2.Need maintenance	If maintained skip to Q 213	
212	Which parts of the latrine need Maintenance?	1. Superstructure 2. Slab 3. Roof 4. Latrine pit		

		5.others/specify_____		
213	What is the condition of the latrine's Superstructure ?	1. No superstructure 2. Only with wood 3. Wood plastered with mud 99. Others/ specify_____		
214	Is the slab sealed with mud Cemented (observation)?	1. yes 2.No		
215	Are there visible signs of flies in oraround the latrine?	1. yes 2.No		
216	Is there a hand washing facility around the latrine?	1. Yes 2. No		
217	How close are hand-washing facilities to the latrine (Observation)?	1. Next to the latrine 2. Within walking distance 3. Inside the house 4.No facilities		
218	How far is the distance between the Latrine and the house?	Specify in meters_____		
219	How frequently do you clean the latrine?	1.immedatly after used 2. two times a day 3. one times a day 99.others/specify ----------		
220	Who uses the latrine?	1.Males only 2.Females only 4. children only 3. All family members		
221	If users are adult males or females only, why?	1.Both sexes do not share 2.Males can go for open defecation 3.Males stay out for work 4. No reason		

		99. Others/specify_____		
222	If latrine is used regularly, why?	1.Excreta are dangerous to health 2.Convenient/privacy 3.No other place to defecate 99. Others/specify_____		
223	If latrine is used irregularly, why?	1. No superstructure 2. Bad smell 3. Open field is convenient 4. Stay out for work 99. Other/specify____		
224	What season is the latrine facility used by?	1. Rainy season 2. Dry season 3. throughout the year 99. Others /specify____		
225	What is the material used for superstructure?	1. Wood 2. grass 3. Mud plaster 4. Tin 5.wood and mud platform --slab 6.cement slab platform.---slab		
226	What type of anal cleaning materials do you use?	1. Paper 2. Stone 3. Water 4.Leaves 99. Others_____		
227	How do you dispose of the waste if the latrine is full?	1. Dig other pit 2.Sucking by municipal truck 3. Re-digging often 3-6 months 4. dispose in sewer line 99.Other/specify_____		
	Part III: Utilization of Latrine by Under 5 children			
301	Do you have under 5 children in the house?	1. Yes 2. No	If no skip to Q307	
302	Do <5 children use latrine?	1. Yes 2. No	If no skip to Q 304	
303	At what age do children			

	start using Latrine?	_____years		
304	What are the reasons for not using the latrine by <5 children?	1.Floor not safe to stand on 2. Large squat hole 3. Latrine not clean 4. Unreasonable bad smell 99. Others/specify_____		
305	Where do you dispose faeces of Children who do not start using latrines?	1. Left in the house 2. Disposal in the compound 3. Disposal outside the compound 4. Pit latrine disposal 99. Others/specify_____		
306	When do you wash your hand?	1.After defecation 2. After cleaning child's bottom 3.Before handling food 4.Before feeding children 99. other/specify___		
307	What do you usually use during hand washing especially after defecation, after cleaning child's bottom, before feeding children and handling food?	1.Only water 2.With soap 99. Others/specify____		
308	Do children's faeces contain disease causing microorganisms?	1. Yes 2. No		
309	Is latrine utilization satisfactory?	1. Yes 2. No		

Part: 4 Observational check lists

401	Is the latrine functional?	1. yes 2. no	
402	Where is the latrine located?	1.inside or attached to dwelling 2.Outside premises	
403	How close are hand-washing facilities to the latrine?	1. next to the latrine 2. Within walking distance 3. inside the house 4.No facilities	
404	How far is the latrine from your living quarters?	1. less than 6meters 2. 6 to 10 meters 3. above 10 meters	
405	Are the path way to the latrine is clear; is there a sign of regular use?	1.Yes 2.No	
406	If the path way is not clear; what are the potential obstacles?	1. covered with grass /bushes 2. Waste or debris in its path 3. Major crevices or pothole 4. Entrance is obstructed 7. Other observations _____	
407	What is the condition of latrine superstructure?	1. No superstructure 2. Wood plastered with mud/ wood 99. Others/ specify_____	
408	Does the latrine need maintenance?	1. yes 2. no	If no skip to 410

411	Does the squatting have cover?	1. yes 2.No	
409	Which parts of the latrine need maintenance?	1. Superstructure 2.Sab 3. Roof 4. Latrine pit 5.others/specify____	
410	Does the squatting have cover?	1. yes 2.No	If no skip to 412
411	What is the cover of the latrine pit?	1.Wood and mud 2.Concrete slab 99.Other specify ----------	
412	Are there visible signs of flies in or around the latrine?	1. yes 2.No	
413	Is there fresh faecal matter present inside the latrine pit/ sign of use seen on latrine floor?	1. Yes 2. No	
414	Is the area around the latrine is free of excreta?	1.yes --------- 2.no--------	
415	Is faeces seen around the house or within the compound?	1.yes------ 2.no-------	
416	Doesthe latrine have door?	1. Yes 2. No	
417	Is there observed Fly?	1.Yes 2.No	
418	Dose the latrine has ventilation?	1.Yes 2.No	
419	Is there any bad odor?	1. Yes 2.No	
420	Is the latrine clean?	1. Yes 2. No	
421	Is there light provision during night time use?	1. Yes 2. No	

II. Amharic Questionnaire

ጎንደር ዩኒቨርሲቲ ህክምና እና ጤና ሳይንስ ኮሌጅ ; የህብረተሰብ ጤና ትምህርት ተቋም

አማርኛ ቃለ-መጠይቅ

የቀበሌው/ጎጥ ስም----------

የመኖሪያ ቤቱ መለያ ኮድ/ቁጥር--------

ሰላም! እኔ---------- እባላለሁ::የመጣሁት ከደሴ ከተማ ጤና ጽፈት ቤት ነው:: ጥናቱን የሚያካሂዱት በጎንደር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ተቋም የማስተርስ ዲግሪ ተማሪ የሆኑት አቶ ተገኘ ሽፈራው ናቸው:: ከዚህ ጥናት የሚገኘው ውጤት የህብረተሰቡን ጤና ለማሻሻል ና ለመቆጣጠር አስፈላጊ የሆኑ እርምጃዎችን ለመውሰድ ከፍተኛ ድርሻ አለው:: እኔ እርስዎን ለጥናቱ ጠቃሚ መረጃዎችን እንደሚስጡኝ በማመን ለዚህ ጥናት ተሳታፊ እንዲሆኑ መርጨዎታለሁ::ለዚህ ደግሞ ፈቃደኛ ከሆኑ የተወሰኑ ጥያቄዎችን እንድመልሱልኝ እጠይቃለሁ:: እርስዎ የሚሰጡኝ ማንኛዉም መረጃ ምስጢራዊነቱ ሙሉ በሙሉ የተጠበቀ ነዉ ::

ዓላማው ገብቶኝ በጥናቱ ለመሣተፍ፡ ሀ. ፈቃደኛ ሆኛለሁ ለ. ፈቃደኛ አይደለሁም

መረጃዉን የሰበሰበዉ ስም ---------- ፊረማ----------ቀን----------

የመረጃዉን ጥራት የተቆጣጠረዉ ስም---------- ፊርማ--------ቀን----------

የቃለ-መጠይቁ ውጤት፤ 1. ተሳታፊው/ዋ የሉም 2. ፈቃደኛ አይደሉም

3. ተጠናቋል 4. አልተጠናቀቀም

መጠይቅ አቅራቢዎች ሊከተሉዋቸው የሚ ገቡ ተጨማሪ መመሪያዎች

1. ውይይቱ ሊካሄድ የሚገባው ተጠያቂዎች መጠይቁን ለማካሄድ ፍቃደኛ ሲሆኑ ብቻ ነው
2. መጠይቁ የ ሚሞላው በስክርቢቶ ብቻ ነው
3. በሚሰጠው መልስ መሰረት በተገቢው መልኩ መልሱን ያክብቡ
4. መታለፍ ያለባቸውን ጥያቄዎች በትክክል ማለፍዋን ያረጋግጡ
5. መጠይቁ የሚመለከታቸው የመጸዳጃ ቤት ካላቸው ቤተሰቦች ውስጥ ከ 18 አመት እድሜ በላይ ያሉ የቤተሰቡ ተጠሪ የሆኑ ሊሆኑ ይገባል፡

ተ.ቁ.	ጥያቄዎች	አማራጭ መልሶች	የይለፍ መልሶች	የመል ስ ኮድ
ክፍል I: የማህበራዊ፤ኢኮኖሚያዊ ና ስነ-ህዝብ ገጽታዎች				
001	የቤተሰብ አባላት ብዛት?	----------		
002	ጾታ?	1. ወንድ 2. ሴት		
003	እድሜ?	----------		
004	ሃይማኖትዎ ምንድን ነው?	1.ኦርቶዶክስ 2. ሙ ስሊም 3.ፕሮቴስታንት 99. ሌላ/ይጠቀስ ----------		
005	ብሄረሰብዎ ምንድን ነው?	1.አማራ 2.ትግሬ 99. ሌላ/ይጠቀስ----------		
006	የእርስዎ ስራ ምንድን ነው?	1.የቤት እመቤት 2. የቀን ስራ 3. ግብርና 4. ንግድ 5. የመንግስት ሰራተኛ 99.ሌላ----		
007	የትምህርት ደረጃዎ ምን ያህል ነው?	1.ያልተማሩ 2. ማንበብ ና መጻፍ 3.1-6ኛክፍል 4.7-8 5.9-10ክፍል 6.10-12 99. ሌላ/ ይጠቀስ----------		
008	የቤቱ ሃላፊ/አስተዳዳሪ ማን ነው?	1.አባት/ባል 2.እናት/ሚስት 99.ሌላ/ይጠቀስ---------	እናት/አባት ካልሆነ ወደ ጥያቄ 012ይለፉ	
009	የጋብቻ ሁኔታ?	1.ያገቡ 2.ያላገቡ 3. የፈቱ 4. ባል የሞተባቸው 5.ተለያይተው የሚ ኖሩ		
010	የ ባለቤትዎ የትምህርት ደረጃ?	1.ያልተማሩ 2. ማንበብ ና መጻፍ 3.1-6ኛክፍል 4.7-8 5.9-10ክፍል 6.10-12 99. ሌላ/ ይጠቀስ----------		
011	የባለቤትዎ ስራ ምንድንነው?	1.ግብርና 2. የቀን ስራ 3. ንግድ 4. የ መንግስት ሰራተኛ 99.ሌላ/ይጠቀስ---		
012	በቤቱ በወርምንያህል ብር ገቢ የሆናል?	--------- ብር		

ክፍል II: የ መጸ ዳ ጃ ቤት ሁ ኔ ታ ና የ አ ዋ ቂ ዎ ች የ መጸ ዳ ጃ ቤት አ ጠ ቃ ቀ ም

201	የ መጸ ዳ ጃ ቤ ቱ ምን አ ይ ነ ት ነ ው?	1.የ ተ ለ ም ዶ 2.ሽ ታ አ ል ባ 3. በ ው ሃ የ ሚ ሄ ድ 99. ሌ ላ ካ ለ ይ ጠ ቀ ስ --------		
202	ምን ያ ህ ል ቤ ቶ ች ይ ህ ን መጸ ዳ ጃ ቤት ከ ና ን ተ ጋ ር በ ጋ ራ ይ ጠ ቀ መ በ ታ ል ?	1.በ ጋ ራ አ ን ጠ ቀ ም ም 2. 2-3 ቤ ቶ ች 3. 4 ወ ይ ም ከ ዚ ያ በ ላ ይ 99. ሌ ላ /ይ ጠ ቀ ስ ----------		
203	የ መጸ ዳ ጃ ቤ ቱ ከ ተ ሰ ራ ምን ያ ህ ል ጊ ዜ ሆ ነ ው?	---------- አ መ ት ከ ---------- ወ ራ ት		
204	መጸ ዳ ጃ ቤ ቱ የ ተ ሰ ራ ው የ ት ቦ ታ ነ ው?	1.ከ አ ጥ ሩ ውስ ጥ ወ ይ ን ም ከ አ ጥ ሩ ጋ ር ተ ያ ይ ዞ 2. ከ አ ጥ ሩ ውጭ 99. ሌ ላ /ይ ጠ ቀ ስ -		
205	መጸ ዳ ጃ ቤት ለ መስ ራ ት ያ ነ ሳ ሳ ች ሁ ምክ ን ያ ት ምን ድ ን ነ ው?	1.ከ ጤ ና ባ ለ ሙ ያ ዎ ች በ መስ ማ ት 2.በ ራ ስ ተ ነ ሳ ሽ ነ ት 3.ሌ ሎ ች ን በ ማ የ ት 4.በ ቀ በ ሌ በ መ ገ ደ ድ 5.የ ጉ ድ Õ ድ ክ ዳ ን ስ ለ ተ ሰ ጠ ን 99. ሌ ላ /ይ ጠ ቀ ስ --------- -		
206	የ መጸ ዳ ጃ ቤ ቱ ሁ ኔ ታ ምን ይ መስ ላ ል ?ያ ለ ውን ምል ክ ት ያ ድ ር ጉ	1.ከ ለ ላ አ ለ ው -------- 2.በ ር አ ለ ው ---------- 3.የ እ ጅ መ ታ ጠ ቢ ያ አ ለ ው---------- 4.ብ ር ሃ ን ያ ለ ው --------- 5. ወ ደ መጸ ዳ ጃ ቤ ቱ የ ሚ ዎ ስ ድ		

		አግባብ ያለው መንገድ - 99. ሌላ /ይጠቀስ ----------		
207	መጸደጃ ቤቱ አገልግሎት መስጠት ይችላል?	1. አዎ 2. አይችልም	አዎ ከሆነ ወደ ጥያቄ 209 ይለፉ	
208	የመጸዳጃ ቤቱ አገልግሎት የማይሰጥ ከሆነ አዲስ መጸዳጃ ቤ ላለመገንባት ምክንያትዎ ምንድን ነው?	1.የቦታ እጥረት 2.ከፍተኛ የግንባታ ዋጋ 3.ከጎረቤት ጋር ስለምጠቀም 4.የህዝብ መጸዳጃ ቤት ስለምጠቀም 99. ሌላ /የጠቀስ ----------		
209	የመጸዳጃ ቤቱ ግንባታ እቃዎች በድጋፍ የተገኙ ናቸው?	1. አዎ 2. አይደለም	አይደለም ከሆነ ወደ ጥያቄ 211 ይለፉ	
210	የትኛው የመጸዳጃ ቤቱ አካል ድጋፍ ተደርÕል? ከአንድ በላይ ካለ ምልክት ያድርጉ?	1.የመጸዳጃ ቤቱ መቀመጫ -------- 2.ጣሪያው/በሩ -------- 3.የመጸዳጃ ቤቱ ጉድÕድ ቁፋሮ ------- 4.የቀዳዳው ግድግዳ --------- 5.የቤቱ ግድግዳ -------- 6.ጠቅላላ ግድግዳው ------- 7.ጠቅላላ መጸዳጃ ቤቱ -------- 99. ሌላ /ይጠቀስ ----------		
211	መጸዳጃ ቤቱ ደረጃ በምን ላይ ይገኛል?	1.ጥገና የማያስፈልገው 2. ጥገና የሚያስፈልገው	ጥገና የማያስፈልገው ከሆነ ወደ ጥያቄ 213 ይለፉ	

212	ጥገና የሚያስፈልገው የመጸዳጃ ቤቱ ክፍል የትኛውነው?	1.ከለላው 2. ወለሉ 3. ጣሪያው 4. የጉድÕዱ ክዳን 99. ሌላ /ይጠቀስ -----		
213	የ መጸዳጃ ቤቱ ከለላ ሁኔታ ምንድን ነው?	1.የለውም 2. በእንጨት ብቻ 3.በእንጨት ና በጭቃ 99. ሌላ /ይጥቀሱ----		
214	የመጸዳጃ ቤቱ ወለል በስሚን ቶ/በ ጭቃ የተለሰነ ነው?	1. አዎ 2. አይደለም		
215	በመጸዳጃ ቤቱ ውስጥ ና ዙሪያ የሚታዩ ዝንቦች አሉን ?	1. አዎ 2. አይደለም		
216	በመጸዳጃ ቤቱ የእጅ መታጠቢያ አለን ?	1. አዎ 2.የሉም		
217	የእጅ መታጠቢው ከመጸዳጃ ቤቱ ምን ያህል ይርቃል ?	1.ከመጸዳጃ ቤቱ ቀጥሎ 2. ከመጸዳጃ ቤቱ ራቅ ብሎ 3. በመኖሪያ ቤቱ ውስጥ 4.የእጅ መታጠቢያ የለውም		
218	የመጸዳጃ ቤቱ ከመኖሪያ ቤቱ ያለው ርቀት በሜትር ምን ያህል ነው?	--------(በሜትር)		
219	ምን ያህል ጊዜ መጸዳጃ ቤቱን ታጸዱታላችሁ?	1.ወዲያውኑ እንደተጠቀምን በት 2.በቀን ሁለት ጊዜ 3. በቀን አንድ ጊዜ 4.ሌላ /ይጠቀስ ----------		

220	መጸዳጃ ቤቱን የ ሚጠቀመው ማን ነ ው?	1.ወንዶች ብቻ 2. ሴቶች ብቻ 3. ህጻናት ብቻ 4. ሁሉም የ ቤተሰብ አ ባ ላ ት		
221	መጸዳጃ ቤቱን የ ሚጠቀሙት አ ዋቂ ወንዶች ወይን ም ሴቶች ብቻ ከ ሆነ ለ ምን ?	1.ሁለ ቱም ጾ ታዎች አ ን ድ መጸዳጃ ቤት ስ ለ ማይ ጋ ሩ 2.ወንዶች ሜዳ ለ መጸዳዳ ት መሄ ድ ስ ለ ሚቸ ሉ 3. ወንዶች ውጭ ለ ስ ራ ስ ለ ሚሄ ዱ 4. ምክ ን ያ ት የ ለ ውም 99.ሌላ /ይ ጠቀ ስ ----------		
222	መጸዳጃ ቤቱን የ ሚያ ገ ለ ግ ለ ው ሁልጊ ዜ ከ ሆነ ለ ምን ?	1.ሰ ገ ራ ለ ጤና ጎ ጂ ስ ለ ሆነ 2. መጸዳጃ ቤት ምቹ ስ ለ ሆነ 3. ሌላ መጸዳጃ ስ ለ ሌለ 4. ሌላ /ይ ጠቀ ስ ----------		
223	መጸዳጃ ቤቱን የ ሚያ ገ ለ ግ ለ ው አ ል ፎ አ ል ፎ ከ ሆነ ለ ምን ?	1.ከ ለ ላ ስ ለ ሌለ ው 2. መጥ ፎ ሽ ታ ስ ላ ለ ው 3.ሜዳ ላ ይ መጸዳዳ ት ስ ለ ሚመች 4. ለ ስ ራ ውጭ ስ ለ ምን ሄ ድ 5. ሌላ /ይ ጠቀ ስ ----------		
224	በ የ ት ኛ ው ወቅ ት ነ ው መጸዳጃ ቤቱ አ ገ ል ግ ሎ ት የ ሚሰ ጠ ው?	1. በ ክ ረ ምት 2. በ በ ጋ 3. አ መ ቱ ን መ ሉ 99.ሌላ /ይ ጠቀ ስ ------ ---		
225	ከ ለ ላ ው የ ተ ሰ ራ ው ከ ምን ድ ን ነ ው?	1.ከ እ ን ጨት 2. ከ ሳ ር 3. ከ ጭቃ 4.ከ ቆ ር ቆ ሮ 5. ከ እ ን ጨት ና ከ ጭቃ 6.ከ ስ ሚ ን ቶ		
226	መጸዳጃቤት ከ ተ ጠቀ ማች ሁ በ ሁÏላ ለ መጥ ረ ጊ ያ	1.ወ ረ ቀ ት 2. ድ ን ዳ ይ 3.ውሃ 4.ቅ ጠል 5. ሶ ፍ ት		

	የ ምትጠቀ ሙት ምን ድን ነ ው?	99. ሌላ /ይ ጠቀ ስ ----------		
227	መጸ ዳ ጃ ቤ ቱ ሲ ሞላ እ ን ዴት ነ ው ሰ ገ ራ ው ን የ ም ታ ስ ወ ግ ዱ ት ?	1.ሌላ መጸ ዳ ጃ ቤ ት እ ና ዘ ጋ ጃ ለ ን 2. በ መ ጣ ጭ መ ኪ ና እ ና ስ መ ጥ ጠ ዋ ለ ን 3.ደ ጋ ግ መ ን ከ 3-6 ወ ር እ ን ቆ ፍ ራ ለ ን 4.በ ማ ፋ ሰ ሻ ቱ ቦ እ ን ል ከ ዋ ለ ን 99.ሌላ /ይ ጠቀ ስ ----------		
ክ ፍ ል III: ከ አ ም ስ ት አ መ ት በ ታ ች ለ ሆ ኑ ህ ጻ ና ት የ መ ጸ ዳ ጃ ቤ ት አ ጠ ቃ ቀ ም				
301	ከ 5አ መ ት በ ታ ች ህ ጻ ና ት በ ቤ ት ው ስ ጥ አ ሉ ?	1. አ ዎ 2. የ ሉ ም	ከ ሌ ሉ ወ ደ ጠ ያ ቄ 307 ይ ለ ፉ	
302	ከ 5አ መ ት በ ታ ች ያ ሉ ህ ጻ ና ት መ ጸ ዳ ጃ ቤ ት ይ ጠ ቀ ማ ሉ ?	1. አ ዎ 2. አ ይ ጠ ቀ መ ም	የ ማ ይ ጠ ቀ ሙ ከ ሆ ነ ወ ደ ጥ ያ ቄ 304 ይ ለ ፉ	
303	ህ ጻ ና ት መ ጸ ዳ ጃ ቤ ት መ ጠ ቀ ም የ ሚ ጀ ም ሩ ት በ የ ት ኛ ው የ እ ድ ሜ ክ ል ል ነ ው?	----------አ መ ት		
304	ህ ጻ ና ት መ ጸ ዳ ጃ ቤ ት የ ማ ይ ጠ ቀ ሙ ት ለ ም ን ድ ን ነ ው?	1. ወ ለ ሉ ለ መ ቆ ም ስ ለ ማ ይ መ ች 2. ቀ ዳ ዳ ው ሰ ፊ ስ ለ ሆ ነ 3. ን ጽ ህ ና ስ ለ ሌ ለ ው 4. መ ጥ ፎ ሽ ታ ስ ላ ለ ው 99.ሌላ /ይ ጠቀ ስ ----------		
305	መጸ ዳ ጃ ቤ ት መ ጠ ቀ ም ያ ል ጀ መ ሩ ህ ጻ ና ት ን ሰ ገ ራ እ ን ዴ ት ታ ስ ወ ግ ዳ ላ ች ሁ ?	1. መ ጸ ዳ ጃ ቤ ት ው ስ ጥ መ ጣ ል 2. መ ሬ ት ቆ ፍ ሮ በ መ ቅ በ ር 3. ከ መ ኖ ሪ ያ ቤ ት ው ስ ጥ የ ት ም ቦ ታ 4. ሌ ላ /ይ ጠ ቀ ስ ----------		
		1.ሰ ገ ራ ከ ተ ጸ ዳ ዳ ን በ ሃ ላ		

306	እጃችሁን የምትታጠቡት መቼ ነው?	2.የህጻናትን ፊንጢጣ ካጸዳን በሃላ 3.ምግብ ከማዘጋጀታችን በፊት 4.ህጻናትን ከመመገባችን በፊት 5.ሌላ /ይጠቀስ ----------		
307	እጃችሁን ስትታጠቡ በምንድን ነው በተለይ ሰገራ ከተጸዳዳችሁ በሃላ፣ ለየህጻናትን ፊንጢጣ ካጸዳን በሃላ፣ ለህጻናትን ከመመገባችን በፊትና ምግብ ከማዘጋጀታችን በፊት?	1. በውሃ ብቻ 2. ከሳሙና በውሃ 3. ሌላ /ይጠቀስ -------		
308	የህጻናት ሰገራ የበሽታ አምጭተህዋስያን ይኖረዋልን ?	1. አዋ 2. አይኖረውም		
309	የመጸዳጃ ቤት አጠቃቀም አጥጋቢ ነውን ?	1. አዎ 2. አይደለም		

ክፍል IV: የእይታ ማረጋገጫ ዝርዝር

401	የመጸዳጃ ቤቱ ኣገልግሎት ይሰጣል?	1.አዎ 2. አይሰጥም		
402	መጸዳጃ ቤቱ ያለበት ቦታ?	1.ከቤት ውስጥ /ከቤት ጋር ተያይዞ 2.ከቤት ውጪ		
403	የእጅ መታጠቢያው ከመጸዳጃ ቤቱ ምን ያህል ቅርብነው?	1.እጅ መታጠቢያ የለውም		

		2.ከመጸዳጃ ቤቱ ቀጥሎ 3.በመጓዣያ ርቀት 4.በቤት ውስጥ		
404	የመጸዳጃ ቤቱ ከመኖሪያ ቤቱ ያለው ርቀት?	1.ከ6ሜትር ያነሰ 2.ከ6-10ሜትር 3.ከ10ሜትር በላይ		
405	ወደ መጸዳጃ ቤቱ የሚዎስደው መንገድ ግልጽነው?/በተደጋጋሚ ጥቅም እንደሚሰጥ ያስታውቃል?	1. አዎ 2. አያስታውቅም		
406	መንገዱ ግልጽ ካልሆነ ለዚህ ምክንያት ሊሆኑ የሚችሉት ምንድን ናቸው?	1.በሣር መሸፈኑ 2.ቆሻሻ በመንገዱ መኖሩ 3.ትልቅ ጉድጓድ መኖሩ 4.መግቢያው ተዘግታል 5.ሌላ ካለ ይጠቀሱ----		
407	የመጸዳጃ ቤቱ ከለላ ሁኔታ ምን ይመስላል?	1.ከለላ የለውም 2.በእንጨት ብቻ 2.በእንጨትና በቆቃ የተለሰነ 3.ሌላ/ይጠቀስ----------		
408	የመጸዳጃ ቤቱ ጥገና ያስፈልገዋል?	1. አዎ 2. አያስፈልገውም	አያስፈልገውም ከሆነወደ410	
409	የትኛው ክፍል ነው ጥገና የሚያስፈልገው?	1.ከለላው 2. መቀመጫው 3.ጣራው 3. ቀዳዳው 5.ሌላ/የጠቀስ----------		
410	የመጸዳጃ ቤቱ መቀመጫ ቀዳዳ መዝጊያ አለው?	1.አዎ 2.የለውም	የለውም ከሆነ ወደ412 ይለፉ	
411	የመቀመጫ ቀዳዳ መዝጊያ ምንድን ነው?	1.እንጨት ና ጭቃ 2.ስሚንቶ		

		3.ሌላ/ይጠቀስ----------		
412	በመጸዳጃ ቤቱ ዙሪያ ዝንቦች ይታያሉ?	1.አዎ 2.አይታዩም		
413	በመጸዳጃ ቤቱ ጉድጓድ ውስጥ ትኩስ ሰገራ አለ?/አገልግሎት በመስጠት ላይ መሆኑን የሚገልጽ ምልክት በመጸዳጃ ቤቱ ወለል?	1.አዎ 2.የለውም		
414	የመጸዳጃቤቱ አካባቢ ከሰገራ የጸዳ መሆኑ?	1.አዎ 2.አይደለም		
415	በቤቱ ዙሪያ ወይንም በቅጥር ግቢው ውስጥ ሰገራ ይታያል?	1.አዎ 2.አይታይም		
416	የመጸዳጃ ቤቱ በር አለው?	1.አዎ 2.የለውም		
417	የሚታይ ዝንብ አለ?	1.አዎ 2የለም		
418	የመጸዳጃ ቤቱ ማናፈሻ ክፍተት አለው?	1.አዎ 2የለም		
419	መጥፎ ሽታ አለው?	1.አዎ 2የለም		
420	የመጸዳጃ ቤቱ ንጹህ ነው?	1.አዎ 2የለም		
421	በምሽት ለመጠቀም የመጸዳጃ ቤቱ መብራት አለው?	ነአዎ 2. የለውም		

III. Information sheet and consent form in English

This information sheet and consent form should be given to participants who can read and understand, and should be read for participants who cannot read.

Title of the research project: Comparative assessment of the extent of latrine utilization and factors affecting its utilization among urban and rural residents of Dessie ketema district.

Name of investigator: Tegegne Shiferaw Yigzaw

Name of the Organization: University of Gondar College of Medicine and health, Institute of Public Health

Introduction

You are invited to participate as study subject in a research conducted by MPH candidate, from University of Gondar. Your participation is voluntarily. The research team include one principal investigator, two advisors from university of Gondar, six data collectors and two supervisors. Please take time to read the information sheet.

Purpose of the Research Project

We are asking you to take part in this study because we are trying to learn more about latrine utilization and understand more if there is a difference in utilization of latrine among urban and rural households of Dessie ketema district thus to provide potential areas of intervention for concerned bodies.

Procedure

If you are willing to participate, you need to understand the purpose of the study and give your consent. The required information will be collected by an Environmental Health Officer who is currently working under Dessie ketema Health office. Then, you are requested to give your consent to the data collector.

Potential Risks and Discomforts

There are no anticipated risks to your participation. You are only to waste some minutes for giving some answers to the questions that will be provided, and your answers will not be shared to anyone except the research team and your name will not appear together with your answers.

Potential benefits to subjects and/or to the society

The result of the study will be beneficial to design effective interventions to improve latrine utilization that will contribute to the prevention and control of excreta borne diseases. Hence, you are directly or indirectly benefiting yourself and the society as a whole in this respect.

Compensation for participation

You will not receive any payment for your participation in this research study.

Confidentiality

All Personal identifiers & personal information will not be taken. There is no sensitive issue that you will be asked related with your social desirability but any information that is obtained in connection with this study and that can be identified with you will remain confidential. The information collected about you will be coded by numbers. Information will be accessed by the researcher and research assistants only.

Participation and withdrawal

You can choose whether to be a part of this study or not. You may withdrawal at any time without consequences of any kind. You may also refuse to respond to any of the questions that make you undesirable.

Person to contact

If you have any question you can contact any of the following (Investigator and Advisors) and you may ask at any time you want.

1. **Mr. Walelegn Worku-** University of Gondar

E-mai- walelegnw@gmail.com, cell phone-0918775622

2. **Mr. Daniel Haile-** University of Gondar

E-mail- Daniel.haile7@gmail.com, cell phone-0913767956

3. **Tegegne Shiferaw-** Borumeda Hospital

E-mail- ancheneshe@gmail.com, cell phone-0913858845

IV. Information sheet and consent form in Amharic

የመረጃ ና የስምምነት ውል ቅጽ

ይህ የመረጃ ና የስምምነት ውል ቅጽ ማንበብ ለሚችሉት የጥናቱ ተሳታፊዎች ተሰጥቶ እንዲረዱት የሚደረግ ሲሆን ማንበብ ለማይችሉት ደግሞ እንዲነበብላቸውና ሃሳቡን እንዲረዱት ይደረጋል፡፡

የጥናቱ ርዕስ፡ በመጸዳጃ ቤት አጠቃቀም ዙሪያ ና ተያያዐ የአጠቃቀም ምክንያቶች በ ደሴ ከተማ ወረዳ ውስጥ በ ሚገኙ መኖሪያ ቤቶች ዳሰሳ ማድረግ

የዋና ተመራማሪው ስም፡ ተገኘ ሽፈራው

የድርጅቱ ስም፡ ጎንደር ህክምና ና ጤና ሳይንስ ኮሌጅ፣ የህብረተሰብ ጤና አጠባበቅ ት/ቤት

መግቢያ፡ እርስዎ በዘህ የድህረ ምረቃ ት/ርት እጩ በሆነው የ ዳሰሳ ጥናት ላይ እንዲሳተፉ ተጋብዘዋል፡፡ የርስዎ ተሳትፎ በፈቃደኝ ላይ የተመሰረተ ነው፡፡ የጥናቱ ቡድን አንድ ዋና ተመራማሪ፤ ሁለት አማካሪዎች ከጎንደር ዩኒቨርሲቲ፤ስድስት መረጃ ሰብሳቢዎች ና ሁለት አስተባባሪዎች አሉት፡፡ጊዜ ወስደው የመረጃ ና የስምምነት ውሉን ያንብቡት?

የዳሰሳ ጥናቱ የሚካሄድበት አላማ፡ የጥናቱ ዋና አላማ በደሴ ከተማ ወረዳ ውስጥ በ ሚገኙ መኖሪያ ቤቶች የመጸዳጃ ቤት አጠቃቀም ዙሪያ የአጠቃቀም ልዩነት ና ለልዩነቱ ምክንያት የሆኑ ጉዳዮችን ዳሰሳ ለማድረግ ነው፡፡ ውጤቱም ለሚመለከታቸው አካላት አግባብ ያለው መፍትሄ ሰጭ አገልግሎቶች ላይ እንዲያተኩሩ ይረዳቸዋል፡፡

አተገባበር፡ ፈቃደኛ ከሆኑ የጥናቱን አላማ በደንብ ተረድተውት ፈቃደኛ መሆንዎትን ሊነግሩን ይገባል፡፡ የሚፈለገው መረጃ በ ባለሙያዎች የሚሰበሰብ ሲሆን እርስዎም ፈቃደኛነትዎትን ለነሱ እንዲነግሩ እንጠይቅዎታለን፡፡

ሊገጥሙ የሚችሉ ችግሮች/አለመመቸት፡ እርስዎ በጥናቱ ሲሳተፉ ቀድመው የታወቁ ሊደርሱ የሚችሉ ችግሮች የሉም፡፡ ለምንጠይቅዎ ጥያቄዎች መረጃውን ሲሰጡን የተወሰኑ ደቂቀዎች ብቻ ያጠፋሉ፡፡ እርስዎ የሚሰጡን መረጃዎች ከጥናቱ ቡድን ባሻገር ለማንም አይደርሱም፡ ከዘህም በላይ የእርስዎ ስም ከሚሰጡን መረጃ ጋር በአንድነት አይወጣም፡፡

ሊገኙ የሚችሉ ጥቅሞች፡ የርስዎ ተሳትፎ በመጸዳጃ ቤት አጠቃቀም ዙሪያ ና ተያያዐ የአጠቃቀም ምክንያቶች ያለውን ክፍተት ና ልዩነት በማሳየት የመፍትሄ አቅጣጫ ለመቅረጽ ጉልህ አስተዎጽኦ ይኖረዎታል፡፡ ስለዚህ እርስዎ በቀጥታም ሆነ በተዘዋዋሪ ራስዎንም ሆነ ማህበረሰቡን ይጠቅሙታል ማለት ነው፡፡

ምስጢር አጠባበቅ፡ የርስዎ ስም ና የርስዎን ስም ሊያመላክት የ ሚችሉ መረጃዎች ሁሉ አይወሰዱም፡፡ ምንም አይነት ማህበራዊ ኑሮዎን ሊረብሽ ወይንም ሊያናጋ የሚችል ጥያቄ ከዚህ ጥናት ጋር በተያያዘ አትጠየቁም፡፡ የሚሰጡን መረጃ በቁጥር አማካኝነት የሚገናኝ ሲሆን ከጥናቱ ቡድን ባሻገር በማናም ሰው አይታይም፡፡

በጥናቱ የመሳተፍና የማበረጥ መብት፡ በጥናቱ አካል ለመሆን ወይንም ላለመሆን መምረጥ ይችላሉ፡፡ በጥናቱ ከተሳተፉ በመሃል የማበረጥ መብትዎ የተጠበቀ ሲሆን የህም ያለምን በአካባቢዎት የሚሰጡት አገልግሎቶች ሳይበረጡብዎት ይሆናል፡፡ ከዚህም ባሻገር ላልተመቸዎት ጥያቄ መረጃያ ለመስጠት መብትዎ የተጠበቀ ነው፡፡

የሚመለከታቸውን ሰዎች ለማግኘት፡ ይህ የዳሰሳ ጥናት ሲካሄድ ማነኛውንም አይነት ጥያቄ ሲኖርዎት በማንኛውም ጊዜ የሚከተሉትን ሰዎች ማግኘት ና ማነጋገር ይችላሉ፡፡

1. **አቶ ዋለልኝ ወርቁ፡ ጎንደር ዩኒቨርሲቲ**
   E-mail: walelegnw@gmail.com
   ሞባይል ስልክ፡ 0911969579

2. **አቶ ዳንኤል ሃይሌ፡ ጎንደር ዩኒቨርሲቲ**
   E-mail፡ Daniel.haile7@gmail.com
   ሞባይል ስልክ፡ 0913767956

3. **አቶ ተገኘ ሸፈራው፡ ቦሩ ሜዳ ሆስፒታል**
   E-mail: ancheneshe@gmail.com
   ሞባይል ስልክ፡ 0913858845

V. Conceptual framework of latrine utilization

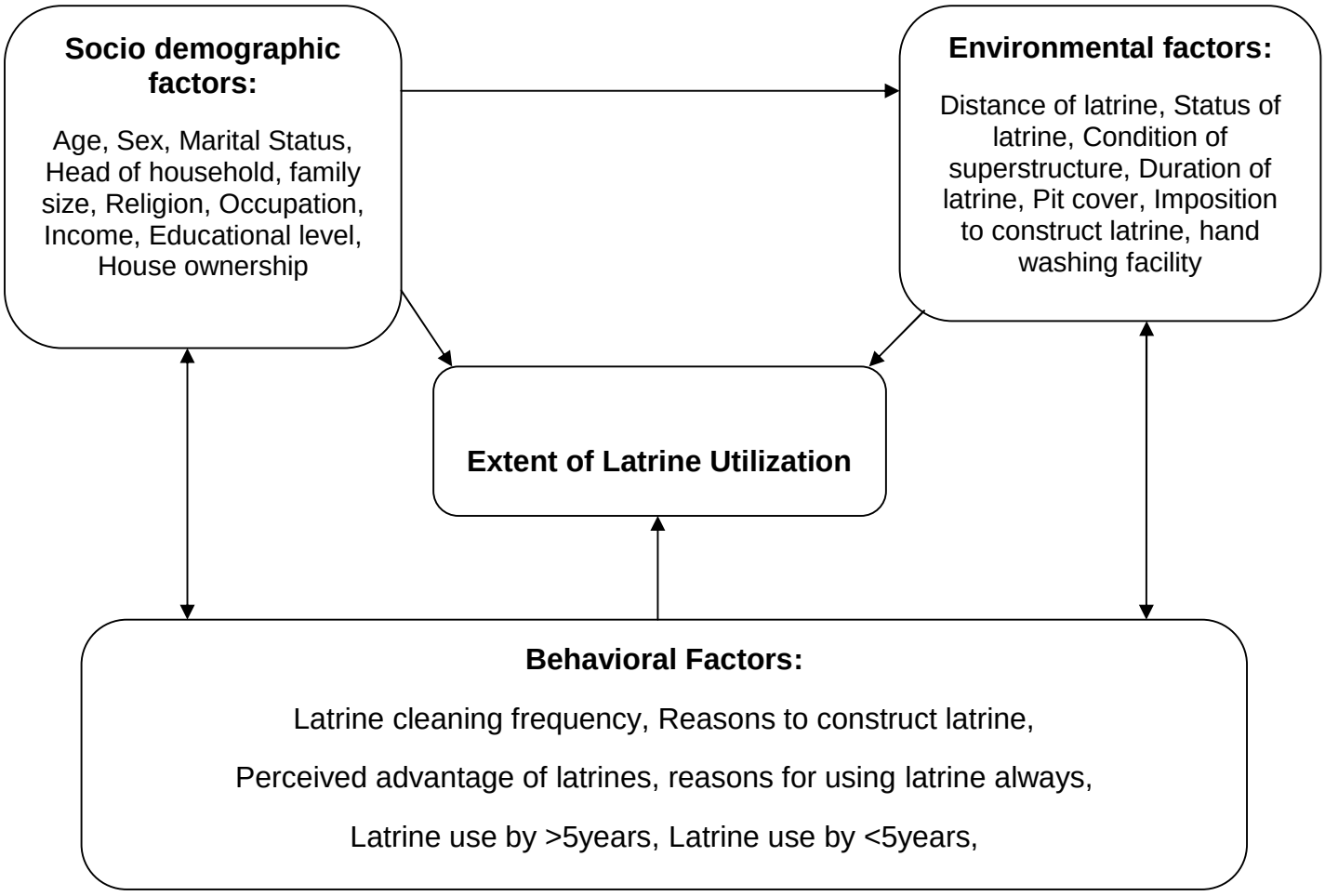

Figure 4: Conceptual framework of latrine utilization

VI. Declaration

I, the undersigned, senior MPH student declare that this thesis is my original work in partial fulfillment of the requirement for the degree of Master of Public Health.

Name: _____

Signature: _____

Place of submission: Institute of public Health, College of Medicine and Health Sciences, University of Gondar.

Date of Submission: _____

This thesis work has been submitted for examination with my/ our approval as university advisor(s).

Advisors

	Name	Signature
1.	_____	_____
2.	_____	_____